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# **GLEANINGS OF THE BEE CULTURE** A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS. ILLUSTRATED SEMI-MONTHLY Published by THE A. I. ROOT CO. MEDINA, OHIO \$1.00 PER YEAR

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## **STRAY STRAWS** FROM DR. C. C. MILLER.

AN UNFORTUNATE QUARREL is going on at Flint, Mich., Canadian bee-keepers being in the fling. Better part 'em, Bro. Hutchinson.

EXPERIMENTER TAYLOR's last report shows Given foundation still ahead, but the Weed much ahead of the old kind of milled. [See editorial in another column.—ED.]

"PLEASANT WORDS are as a honeycomb, sweet to the soul and health to the bones."—PROV. 16:24. Pity they're not more generally in use, considering how little they cost.

HOW SEASONS VARY in a short distance! J. L. Anderson, 15 miles from here, has been getting crops during my failures, but this year the season is poor with him and good with me.

IN ANSWER to that question on p. 692, I don't think it would pay at our house to extract and feed. But I suspect that we make very slow work extracting with our old Peabody compared with those who are used to it. Every one to his own trade.

I WONDER WHY friend Greiner doesn't use an excluder in sorting queens out of swarms (p. 674). Put a frame of brood in a hive, an empty hive over it, and an excluder between; then dump the swarm into the upper hive and sift out your queens.

MY EXPERIENCE doesn't tally at all with that of friend Muth, p. 630. After being stung, my horses show an increased fear of bees. Perhaps if stung as badly as his the case would be different, although I had one stung pretty badly. [Your experience is ours.—ED.]

L. A. ASPINWALL gives in *Review* this plan of uniting: Put the two colonies, one queenless, in the same hive, with a partition of double wire cloth between, both entrances facing the same way. In a few days the queenless bees will of their own accord join the others. I

know that will work, for a number of mine have united in much the same way without my desiring it. He says bees of a laying queen will kill those of a virgin queen to the last bee.

I DON'T KNOW how "What I don't know about bee-keeping.—Dr. C. C. Miller" got into that program on p. 634, unless the printer's devoted assistant has been copying from an old program. That's the essay I read at the North American at Keokuk, and it wouldn't do to read it again at Lincoln.

I DIDN'T BRISTLE UP at what was said on p. 639; but a certain young woman did; and she said, "Just you tell Mr. Root we are always waked up here, and always take care of our bees." As a matter of fact, she was left alone with the bees for more than two weeks at beginning of harvest, and the excellent work she did at that time, together with the good care they had last year, has much to do with the crop of honey they gave.

FRIEND GETAZ is right, I think, in believing that the use of glucose pulls down the price of honey; but I don't quite see that the price of comb honey goes up and down with the price of glucose. Look at the Honey Column. Did best glucose drop 2 cents a pound in Chicago from July 20 to Aug. 20? And has it gone up in Detroit and elsewhere? And is best glucose 5 cents more in Philadelphia than in Denver at the present time? Its control seems to be only one way—always down and never up.

HERE'S THE SENTENCE you couldn't find on p. 632, Mr. Editor: "We separate the section of honey from the wood." Is there any wood in the "section of honey" you separate from the wood? And you ought to tell us what *you* would say instead of saying, "We ate a section of honey." [Surely there is no wood in the section of honey, in the sense I used it. The meaning of "section" in the sense as there employed, is a portion, or what would be enough to fill a section. When you say, for instance, you threw a pail of water on the fire you mean not the pail but the water. The best answer I



can give you on the use of these terms is that made by A. Norton, in another column.—ED.]

HASTY SAYS in *Review* that no swarming without drones is probably all in imagination. Worst swarming he ever had was when he tried very hard and persistently to suppress drones in most of his colonies. [The statement that bees will not swarm without drones does not begin to be supported by recent reports; while we may set it down as an almost invariable rule that they will not leave the hive without a queen, the reports seem to indicate that drones have very little influence one way or the other.—ED.]

I COMMENCED to read to my wife that kink on p. 683 about managing hot wax when spilled. She stopped me short by saying with an emphatic shake of her head, "We're not going to have any spilled wax." I could not deny that her plan was a good one too. [Your wife's determination is quite right. But you know, doctor,

The best laid plans of mice and men  
Gang aft agley.

Something may happen some time in all well-regulated homes when the wax *will* get spilled on the floor. It is a good thing to know what to do then.—ED.]

R. L. TAYLOR, in his report in *Review*, says if bees have a foundation they prefer, they show that preference plainly only up to a certain point. After the preferred sort reaches that point they hold back and let the poor sort partly catch up. That point is reached in sections measuring 9 to the foot. As that is a trifle less than  $1\frac{3}{8}$  from center to center, it must be with-out separators, and that means sections about  $1\frac{1}{8}$  wide with separators. *Query*.—Will bees store more honey in a season in sections  $1\frac{1}{8}$  wide than in wider ones? [The tendency, I believe, with bee-keepers all over the country is strongly toward narrower sections—not because bees show any particular preference for them, but because the market seems to demand them. In Canada the standard is  $1\frac{3}{8}$ ; and our own trade shows that there is more and more demand for the narrower sections.—ED.]

"A NAIL-HEAD is objectionable on account of its liability to catch in the wire cloth of the extractor." Thus the editor, p. 667, on wire nails for spacers. But what's that to me? I don't want my brood-frames to go into an extractor, and I protest against being obliged to use what doesn't suit me, just to accommodate manufacturers who want comb honey men to use the same supplies as extracting-men. Still, it wouldn't be a very hard thing to make the extractor fit the nail-heads. [But, doctor, you can not tell positively that you may never want to produce extracted honey. And, again, suppose you are to adopt wire-nail spacers. These spacers might require a special kind of top-bar

or frame different from what the great mass of bee-keepers would require. Then you would have to pay an extra price because the stuff would be irregular. It is not a question as to whether a certain frame or hive will accommodate manufacturers, but whether it will accommodate a bee-keeper now producing comb honey exclusively, but who may in the future desire to produce extracted.—ED.]

IF BOTTOM-BARS  $\frac{3}{4}$  inch wide will secure combs built clear down every time without having the foundation touch the bottom-bar, or if any other width will do it, then that's the right width for bottom-bars. I've had thousands of bottom-bars  $\frac{1}{16}$  and  $\frac{1}{8}$  wider than  $\frac{3}{4}$ , and the bees always leave a space over them, and I'm a little afraid  $\frac{3}{4}$  wouldn't do much better. I can get combs built down to the bottom-bars by having foundation touch the bottom-bar, but I'd be glad to be rid of the trouble. [A width of  $\frac{3}{4}$  inch is a compromise between the very narrow and the wide bottom-bar. The objection to a wide one is that, when the hive is tilted bottom up, its condition can not be as readily diagnosed as when narrower bars are used. Very many times I judge of the condition of a colony by tilting it up from its bottom-board and peering under. Then, too, I think the bees do build down better to the narrower bar. The best way I know of to get combs clear down is to key up the Hoffman frames, turn the hive upside down, and leave it that way long enough for the bees to build the combs up to the bottom-bars now on top.—ED.]

□ "I FIND THAT the honey-bee becomes acquainted and familiar with the bee-keeper who walks among the hives," says L. A. Aspinwall in *Review*. I'm not skeptical about that as I used to be. Lately I've been experimenting in comb-building, visiting the hive several times a day. I used the crossiest colony in the apiary, Punic half-bloods. Finally I could open up the hive bare-headed, without smoke, after a rain, when bees were doing nothing, and not get a sting. The question remains, Do those bees know me from any one else? [I do not think those bees know Mr. Aspinwall any better than they do any one else; but they become accustomed to the disturbance. We have a path from the factory to our barn, right through the middle of our apiary. This path runs directly in front of and close to quite a number of entrances. The bees of all these colonies have become accustomed to large moving objects passing by, and rarely if ever pay any attention; but colonies remote from this path or any other roadway, I notice, do not take so kindly to a person brushing by the entrance.

I notice when I go a hunting (this is our squirrel season) that the least noise made by the cracking of a twig or the crumpling of the leaves on the part of a human being causes the squirrels to start and seek their hiding-places;

but whenever horses or cattle pass through the woods they pay no attention. They know the cattle are not after them with a gun, and have become accustomed to seeing them. A year ago or so, when I was in poor health, the doctor said I might eat meadowlarks. I always noticed I could get quite near them along the roadways, especially if driving in a buggy; but whenever I went out into the field with a gun they kept me at a good big respectful distance. I give these instances to show that dumb animals as well as insects will tolerate and allow things they are accustomed to when they will not brook things that are unusual.—ED.]

## BEES AND GRAPES.

### PUTTING THEM TO THE TEST.

*By Chauncey Reynolds.*

Aug. 31st a near neighbor came to me and told me my bees were carrying all of his grapes off; so I went over into his grape-arbor, and, sure enough, the bees were there in large numbers. But I told him I was confident that the bees did not at first break the skin of the grape. Of course, I was poohpoohed. He would believe no such thing. I told him he would, upon investigation, find either sparrows, wasps, or something, first punctured the skin of the fruit; then the bees, as would be natural, would gather the juices going to waste. To further illustrate to him that bees would not first break the skin of the grape, I selected a large bunch of them from which there had not been one grape broken off, nor had the skin of any grape been broken. I told him to come with me, as I was going to lay that bunch of grapes directly on top of the frames in a colony of bees, and I would leave them there 48 hours, and then I wanted him to come and see me take the grapes out of the hive. I said I thought he would find the bunch as sound as when put in. Of course, he said I would never find a grape. I did exactly as above stated; but let me first tell you that I did have some misgivings, as nearly every grape on the bunch had in one spot on them a slight scab, looking to me as though at some time the grapes had been stung by something, and had healed over, and I was afraid the bees might work through the old holes in the grapes. But, no! In 48 hours I took the grapes out, when I found not a single grape had been broken. On some of the grapes the bees had put propolis, and some were stuck fast to the frames, so we had quite a little job to get them off; but, as I said, not one single grape was broken in the least. When I first laid the grapes in the hive, there being no sections on the hive, and it being hot weather, there was no cushion on top of the frames; but the bees, when the grapes were first laid on them, crawl-

ed all over the grapes, so you would have thought the grapes would have been all consumed in no time. In 20 minutes I glanced into the hive, and there was not a bee on the grapes; and at no time after did I see a bee taking any notice of the grapes at all. I am now still further than ever convinced that bees must have the holes first bored in fruit before they can get any thing to eat.

Fremont, O., Sept. 3.

### BEES A BENEFIT TO THE GRAPE-GROWER, AND HOW.

I have over 150 colonies of bees, and raise grapes by the ton, and about all the different kinds. I do not think my bees have ever damaged me a penny so far, and I have kept them 18 years, and have had a bearing vineyard for 6 years, and the bees never work on a grape unless it is punctured or has bursted, and then it will begin to ferment inside of 48 hours, if the weather is warm, and is then unfit to eat, for then the juice will begin to run down soon on the other grapes, and smear the bunch all below the bursted or soured grapes; and there is where the bees come in with their help—that is, in cleaning the punctured or bursted berries before they begin to ferment; and instead of their doing harm they are an actual benefit to the grape-grower. To illustrate: Several years ago while at the Columbus, O., fair, Dr. A. B. Mason and I were talking about this very thing, and he gave me an instance that he was personally cognizant of, where a grape-grower complained to a bee-keeper about the damage his bees were doing, and was making a great fuss about it until the man finally moved away with his bees, and then he saw he was mistaken, and he was now positive the bees were worth at least \$100 per year to him in getting rid of the bursted and punctured berries on the bunch, and saved his bunches of grapes from having a mussy, smeary appearance where some of the berries had fermented; so I think if any one will thoroughly investigate the matter, the bees will be acquitted so far as damaging grapes is concerned.

### BEES AND PEACHES.

When it comes to damaging peaches, I can not yet be so positive, as my several hundred trees have not yet begun to bear; but one of my neighbors is already claiming a damage of \$150 to his peach crop by my bees; but as I did not get a dollar's worth of honey this year, the claim is a pretty heavy one to meet under the circumstances. He is very positive the bees did the entire damage, while I maintain that the fruit was certainly imperfect, or in a state of decay; but as to that, I am not positive; but if the bees have actually damaged him to the amount claimed, rather than permit such a condition I shall have to quit the bee-business; for if I move them I shall get near



some one else who has a peach-orchard, and then it will be the same complaint.

GEO. W. LAWSON.

Centreville, O., Sept. 3.

#### BEEES CAN PUNCTURE GRAPES, BUT DON'T.

It seems to me that all there is to the theory is this: There is no bee-keeper of practical experience but knows that bees *can* cut away comb to remove old pollen, miller-moths, etc.; also cut holes through burlap, sheeting, or even enamel cloth, over the top of the hive, and even nibble the edge off a thin strip of wood inserted in the entrance. Well, now, if they do all this (which no one will deny), why can't they puncture the skin of a grape? I for one say they can do it, and, if so inclined, could cut the skin entirely off; but right here is the secret: They naturally lack that inclination, just as much as they naturally lack the inclination to sting when at work in a clover-field or linden forest. If this were not true, what is there to hinder them from puncturing the honey-cells of red-clover blossoms, and even many other honey-secreting flowers, some of which are accessible to nothing but the long bill of the hummingbird? There is no question but that, in *every* instance where bees have worked on grapes, the fruit has burst its skin from some action of the atmosphere, or else the puncturing has been done by yellow-jackets, wasps, or birds; for I am confident that bees would starve before they would think of securing sweets in such a manner. ELIAS FOX.

Hillsboro, Wis., Sept. 7.

#### BEEES ON GRAPES AND OTHER FRUIT.

I am very sure bees *do not* damage grapes. I have had  $\frac{1}{4}$  acre of the soft Early Turner raspberry, which bees do work on, but not till over-ripe. They never touch them till too soft to be very useful. I have raised them seven years, so have tested that. I have also two large Black-heart cherries, which are sure to crack after a heavy rain; then the bees are very attentive to the juice, but never do they molest a *sound* cherry! The skin of these is much tenderer and softer than a grape-skin. It's not the nature of bees to eat open such fruits. Honey is what they are for (to suck). I have grapes, but I never saw bees on them unless on some that got torn or mashed somehow. Just so with apples. Who ever saw a bee working on an apple? But they will sip up the juice in a small way. Oh, no! the rain cracked the grapes. It has cracked some of my plums recently. Bees are busy on goldenrod, but they will no doubt be about the plums unless gathered soon. E. P. CHURCHILL.

Hallowell, Me., Sept. 11.

#### BEEES AND GRAPES.

In regard to bees injuring grapes (p. 647) I will ask the question how long grapes will be

fit for use after they crack open or burst? I think the very heavy rainfalls caused ours to burst, and they would sour in a few hours; hence I can not see how the bees could have damaged them much. J. T. VAN PETTEN.  
Linn, Kan., Sept. 14.

[Friend V., I think you are right. After what appeared in GLEANINGS, to which you allude, I noticed one Sunday afternoon a few bees buzzing about our Delaware grapes over the porch. The grapes were burst open, and the sweet juice was right in sight. It was not soured at all, for I ate some of the bursted ones, and they were curing something like raisins. I presume the reason why there were no more bees was because they were getting stores somewhere else. Some of the grapes had evidently burst a little before, for they were perfectly dried up. I directed Mrs. Root's attention to the bees, and asked her if she had seen bees on the Delawares before this season. She said she had not, and was sure there was not a bee on them the day before, for she had noticed the grapes particularly. As the matter had been up in the journal I examined the bunches very carefully. A good many grapes that seem sound, when examined closely showed a little depression, say the size of a pinhead. Others had this depression larger, and so on. Now, when the smallest depression was visible, the Italians were able to push their tongues down into it, and get the juice. To a careless observer it would appear that the bees made a hole in a perfectly sound grape. But such was not the case. They could not do it. It may be urged that the bees damage the appearance of the grapes any way. Yes, they do; but the grapes that they injure would have been worthless in 24 hours more, any way. The grapes were fully ripe—dead ripe—and had been so for many days. Had they been gathered and sold, or packed away, there would have been no loss from the bees, nor this peculiar breaking open. Where the vine of some sweet variety of grapes is covered with berries in the condition mentioned, *during a spell of dry weather*, the bees would no doubt cover the bunches in swarms; and as fast as a single berry approached this breaking stage, bees would suck out all the juice; and almost every person who might see it would say the bees destroyed the crop, whereas the bees used only what would have been otherwise worth very little, or good for nothing at all. Now, after many years of observation I am satisfied that bees injure grapes thus far and no more. In California, where they make a practice of curing grapes for raisins, the case may be different.—A. I. R.]

#### PEDDLING HONEY.

THE ART OF GETTING PEOPLE TO BUY.

By F. A. Snell.

I have found from experience that much more honey, especially extracted, can be sold by going from house to house, and allowing the people to sample the honey, than will be sold when left with the grocers on sale. Getting people to sample the honey goes quite a way in the making of a sale or sales. Even if some desire to buy honey they forget it when in town trading, and so perhaps go without it for some time. When I desire to peddle honey I put a little comb honey up in crates holding four,

eight, or twelve boxes each. The extracted I now put up in 10-lb. cans, mostly; but a few five-pounds are put in so that, if a sale of a 10-lb. can can not be made, the 5-lb. can may be just what is wanted by a customer.

A quantity of honey in the different packages is loaded into my buggy, and the start is made. I meet Mr. A., who lives about three miles from my home. I stop, take a can of honey, and loosen the screw-cap, and he samples it. I tell him I am out selling, and ask him if he doesn't want a can. The can is bought and paid for, and we drive on.

I stop at the next house, take in a can, and inquire if they are not ready for more honey. I am told that they yet have some of my honey on hand. I bid them good-day, and drive to the next place, at which I have sold honey for many years. A sale of one 10-lb. can is made. We chat a little while, and I take my leave.

The next call is made. Mrs. D. does not desire to buy, but desires me to learn of Mr. D. as to the purchase, as he is from home. A few days later I see him, and he takes a can of 10 lbs. I next see Mr. E., have him sample my honey, and he takes a can. I next ask Mr. F. to sample my honey. He does so. I ask if he would not like a can of 10 lbs. He buys, and I deliver the can at his house. After a pleasant good-morning I state that Mr. F. bought a can of honey of me which I deliver. Mrs. F. is surprised, and says that she doesn't care much for honey, and her husband would have it to eat, and states they had some comb honey on hand, but did not eat any of it, and she had thrown it out. Some ten days later I saw Mr. F., and asked how the honey was going, and I stated what his wife had said. He laughed and said that she seemed to manage her share all right at least. He engaged the second can, to be brought later. In due time it was delivered. Mrs. F. said that she liked that honey well, and thought it very nice, and made no protest this time. The honey, I will say, was well ripened and very thick.

There is very much in properly caring for honey after its removal from the hives.

I next see Mr. G.; get him to sample my honey, and I sell him a 10-lb. can.

Mr. H. is next seen. My honey is sampled, but he would wish only 5 lbs., and I sell him a 5-lb. can.

I next call at the home of Mr. I. Mrs. I. samples the honey, and is pleased with it; inquires if I have 5-lb. cans, stating that she would not care to buy so much as 10 lbs. I inform her that I have a few of the 5-lb. cans, and will get one from the buggy. I do so, and receive pay for it. The price is 10 cts. per lb. for all extracted honey retailed.

Then two or three calls are made and no sales effected. The next sale made is of comb honey, that being preferred. I make the effort to sell

10 lbs. at each sale, hence take the cans of that size when making my calls. Having the smaller cans, and some comb honey, I am prepared to suit the wish of all as to quantity. Very seldom do any wish less than 5 lbs.; but if any will not use that amount I sell them  $2\frac{1}{2}$  or 3 lbs. A honey-leaflet is left with any new customers, which is helpful.

Milledgeville, Ill.

## THE PRESENT STATUS OF BEE-KEEPING IN CUBA.

A FEW INTERESTING STATISTICS REGARDING ITS RESOURCES; THE EFFECT OF THE WAR AND THE FUTURE OF THE CUBAN INDUSTRY.

By F. O. Somerford.

Not seeing any thing in GLEANINGS from Cuba for a very long time, I've concluded to take upon myself the task of breaking the silence. The war here has become so penetrating that the bee business, together with all others, is feeling the effect; and I might say the honey industry is almost extinguished. Only the bee-keepers near Havana can boast of tranquility, and even here we come in contact with the contending parties much oftener than we desire to; while in the interior all of the apiaries have been abandoned—in some instances being destroyed, in others still remaining intact; but as all in those districts have been compelled to move into the cities, by orders from the Captain General, it is dangerous to be caught in such places. Even we who live near Havana can remain at our posts only by securing passes every eight days. In the province of Havana there are still 12 movable-comb apiaries, containing in the neighborhood of 2000 colonies. Three of these belong to Dr. James Warner; two to Dussaq & Co. (Frenchmen), and the remainder to Cubans—or native residents. The annual product from these apiaries amounts to from 50 to 100 tons of extracted honey, with only a few pounds of section honey.

During the last four years, six apiaries, containing about 1200 colonies, have been destroyed by foul brood—two of these belonging to my brother, W. W. Somerford; one to Dr. James Warner, one to Mr. F. H. de Beche, the French consul of Haiti; the other two belonged to natives. As no foul brood now exists in the vicinity of Havana, we all hope it has gone to stay.

In the province of Santa Clara, near Cienfuegos, there is an apiary (movable comb) containing 1200 hives belonging to Dr. Vietta. As it is some way from the city, I've been told that it has been abandoned for several months, owing to the insurrection.

In the east end of the island, at Santiago de Cuba, are several more apiaries, the largest belonging to Dr. Guimara. All of the movable-



comb apiaries on the island have been introduced, directly or indirectly, by Americans. Besides the movable-comb apiaries in Cuba, there are box-hive ranches scattered all over the island, some of them containing as many as 1000 hives. This, though, is the exception instead of the general average, as that runs more approximately between 25 and 125 colonies. These box-hive apiaries yield upon an average about 25 lbs. per colony. The wax product frequently exceeds that of honey in money value.

#### BRITISH CONSUL GENERAL'S REPORT.

This "Report" for 1892 (which was a good honey year) places the exported honey for that year at 259 hogsheads (each holding about 100 gallons net), valued at about \$90,360. France bought 1146 hogsheads; Germany, 653; the United States, 254. □ The remainder found purchasers in Holland, Belgium, Spain, and the Canary Islands. □ According to the above it can readily be seen that France buys more than half of the Cuban honey. Since 1892 France has become a still heavier purchaser. The wax product, the same year amounted to 13,057 arrobas (25 lbs. per arroba), valued at \$97,927.50, or more than \$7000 greater than the value of honey produced, Spain and the Canary Islands being by far the largest purchasers, as they bought 8967 arrobas; the United States was next in the list of purchasers, taking 2486 arrobas; France bought 1492 arrobas. The remaining 112 found purchasers in Puerto Rico and Central America.

#### FLORAL VEGETATION.

On leaving Havana in the winter months (from Nov. 15 to Feb. 15), and taking a route for the country, one is astonished at the thousands of little bell-like flowers growing upon the hedges and highways. The number of these flowers increases as one gets further away from close cultivation of the soil. It does not take a close observer, either, to tell that bees are just roaring on these little white morning-glory-like blossoms. These blossoms are the bee-keepers' bonanza in Cuba. Without them bee-keeping here would soon vanish into the distance. Nature, though, has been kind to the honey industry here so far. Everywhere one goes he finds an unoccupied location for an apiary; that is, ample pasturage for one during the dearth season (from April to November). The royal-palm blossom is the bee-keeper's greatest friend, especially in the province of Havana. Down west of here in the province of Pinar del Rio, there are many flowers during the summer months. There the bee-keeper has the advantages of two honey-flows during a year; but as there are poor shipping facilities, the bees are generally managed so as to secure as much wax as possible, thus avoiding the necessity of such expensive hauling.

Going east as far as the province of Santiago

de Cuba one finds another change in the floral family. Here the campanilla (bell-flower) vanishes entirely, and its place is supplied by several large and valuable trees (for timber), which yield honey. Among the best honey-producers one finds the Veria, the quebra-hacha (ax-breaker), so named for its hardness, and the yaguey, all of these blooming in the summer months, the honey season there being from August until December. However, from what information I have at hand I am of the opinion that the provinces of Puerto Principe, Santa Clara, and Pinar del Rio are far superior to this province (Havana) and Matanzas for the production of honey.

#### THE FUTURE OF THE CUBAN HONEY INDUSTRY.

If this war closes (and we all believe it will some day), and a radical change is made in the administration of the government, the honey industry in Cuba will doubtless receive an impetus that will make the business better known and appreciated. As it is, the taxes paid in Cuba amount to over \$16.00 per capita, while in the United States we pay only a little over \$6.00. But what is dreaded most here is, that, when this war is ended, there will be nothing left but ash-heaps, and the soil of what was once beautiful and inviting.

Punta Brava de Gnatao, Cuba, Aug. 1.

#### THE GABUS AND OTHER CLOSED END-FRAME HIVES.

##### REVERSIBLE FRAMES; HOW TO WINTER NUCLEI, ETC.

*Dr. C. C. Miller.*—Referring to the Gabus hive, as illustrated in GLEANINGS for March 1st, 1896, it seems to me to have many features to recommend it:

1. Its cheapness, the closed-end standing frames constituting two of the sides of the hive.

2. Its adaptability to expansion and contraction.

3. The frames are reversible.

1. Would you please comment on this hive, and state what the result would be of reversing the end comb when full of honey, and placing it in the center of the brood-nest during a moderate honey-flow? Would the honey be carried above and placed in the super?

2. What plan would you recommend for the preservation of two nuclei of, say, four Langstroth frames each, during the winter, it being desired to keep the queens in readiness to replace any that are lost in early spring?

3. Do you think well of the scheme of breeding up in 10 frames and contracting to 8 when the super is put on? Will it not induce swarming?

4. Is it not a good idea to make the foundation for sections drone-cell size?

5. Has the patent on the Heddon hive expired?

6. Please give us your experience with the



8-frame Dovetailed, using two bodies or 16 frames.

7. You will notice in the illustration of the Gabus hive that the frames are parallel with the front instead of, as is usual, at right angles with the front. Is this any disadvantage? and if so, why?

Ben Avon, Pa., Aug. 19. H. P. JOSLIN.

I can hardly add much to the comments made by the editor on the Gabus hive. Mr. Gabus has strongly set forth its advantages, and if, as he says, "It has all the advantages of both the box hive and the movable-frame hive," then certainly it is the hive for all to adopt. Yet the fact remains that it has not been adopted by all, nor even by a majority of bee-keepers, for practically the same hive has been before the public for many years. The main point of difference between this hive and its predecessors is, that in this hive the bolt goes through the  $\frac{1}{16}$  holes in the end-bars. A variation of more than  $\frac{1}{16}$  of an inch makes it impossible for the  $\frac{1}{4}$ -inch bolt to enter. It requires nicer workmanship than I have generally seen in bee-hives to have no variations of  $\frac{1}{16}$  of an inch. Supposing, however, all goes together snugly when new and empty, there is some liability to change through the course of time; and with a cross lot of bees boiling out at the open joints it might take more time and care than desirable to get the bolt through.

Considering the lifetime of a bee-hive, the difference in expense is not a very great matter; and while one with long experience may handle the frames of such hives readily, others will find it much easier to have hanging frames with some sort of automatic spacing by which every frame will easily take its proper place.

I don't know just how much value is now-days attached to this matter of reversing the frames; but there seems to be little said about it, and I suspect that some who formerly practiced it have given it up. The claim that, by reversing, swarming could be prevented, seems to have no solid foundation; but it seems to me that reversing has value for the sake of getting combs built solidly to both top and bottom bars. There may be a question, however, whether it is a desirable thing to break up the house-keeping arrangements of the bees by turning their rooms upside down. I know there were reversible frames in use at Medina, and perhaps the editor will kindly tell us whether they are now used more or less than formerly.

If the end comb were filled with sealed honey, and placed in the center of the brood-nest, I think reversing would not make the slightest difference. If the comb were partly filled or partly sealed, then reversing might make a difference. Whether partly or wholly filled, if such frame were put in the center the honey would sometimes be carried up into the supers and sometimes not—oftener not, in my own ex-

perience. One year, during the honey harvest, I put empty combs into the center of many hives, and almost invariably these combs were filled solid with honey. Of course, in that case full combs would hardly have been emptied.

There seems to be a good deal of difference in colonies as to the amount of brood, and consequently the amount of honey left in the brood-nest; and I am inclined to the opinion that, in the long run, it makes no difference as to the placing of the combs. If they empty out a comb that you put in the center, they'll fill up others at the sides, so that in the end you'll be just where you started. It is possible, however, that uncapping filled combs in the brood-nest may make a real difference. No matter where such combs are placed, the bees are likely to empty them; and if there's no room for the honey in the other brood-combs it must go into the super.

2. The best plan I know of is to put the two nuclei side by side in the same hive, with an impassable division-board between them, the two entrances at the front being six to twelve inches apart. I speak confidently of this plan after much experience. The nuclei were always found in winter close up against the division-board, the whole forming a globe just as if they had been one colony, and I think they wintered just as well as if they had been fully united.

3. There seems no doubt that lack of room helps to induce swarming, and reducing the room is probably worse than to start in the first place with limited room. If I started the season with a ten-frame hive, I think I would keep the ten frames all through. If I used an eight-frame hive, I think I would start with from 12 to 16 frames, and reduce to 8 on giving super.

4. I think not. Worker-comb makes a better-looking surface when sealed. If the queen can get into the super, she is more likely to go up and lay in drone than worker comb, always providing drone comb is scarce in the brood-nest. If excluders are used, of course she can't go up; but in that case it might delay the sealing of some of the sections, for I've seen cases in which a section was entirely sealed except a little corner of drone comb, the cells being entirely drawn out, but without a drop of honey, the bees evidently holding them open for the use of the queen.

5. I think not.

6. Couldn't. It would fill a whole number of GLEANINGS. I may give briefly, however, the result so far as I have got. Somewhat contrary to my expectations, I have not made a success of running two stories throughout the season for comb honey. I stuck to it faithfully throughout most of the season, with some twenty colonies, against the earnest pleadings of my assistant. But I've had good success by giv-

ing each colony a second story at the beginning of the year, reducing to one story at harvest, then at the close of harvest giving a second story till time to take in cellar.

7. The parallel, or "warm" system, as it is called, has not found great favor among beekeepers in this country, although much used across the ocean. The chief objection made is that it does not allow so free ventilation and so free entrance to any one of the frames. Perhaps there isn't any very great difference in the two systems. C. C. MILLER.

Marengo, Ill.

[I know of no real decided advantage in reversing, except getting combs built down to bottom-bars as the doctor states. It was once claimed that it would prevent swarming, and kill queen-cells; but it does neither. Sometimes reversing at the right time will throw the honey from the brood-nest to the supers.—Ed.]

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### HONEY-PLANTS OF FLORIDA.

ALSO SOMETHING ABOUT POISONOUS HONEY.

B. A. P. W.

During the past four years I have been paying attention to trees, shrubs, and plants which afford pasturage for bees; and last fall, for the first time, I found them busily at work every day upon goldenrod, which is so very abundant. They also worked very industriously upon the wild portulaca which grows in Florida, and is, I think, common in most of the Southern States. This plant has stem and foliage like that of the cultivated portulaca (*grandiflora*), and has a purplish-pink blossom, which in shape is like that of the single flower of the cultivated kind, but much smaller.

Then, too, the common, much-despised sorrel, called in some States "horse-sorrel," is a plant upon which bees work in such numbers that, in passing by a field where it is plentiful, one can hear their humming very distinctly, though a good distance away.

Among cultivated plants, cassava should be given a high place in the estimation of beekeepers. (In this name the emphasis is upon the first syllable.) The plant produces flowers in great profusion, upon which bees cluster, so that, at a distance of sixty feet from a "patch" of it, their humming can be heard so as at first make the impression that a swarm is coming.

A small-leaved tree, of bush habit, growing from fifteen to twenty feet high, and called myrtle in South Florida, is a hardy evergreen which grows abundantly on the edge of wet places. The profuse bloom is an insignificant little thing in appearance, but it is covered by bees on sunny mornings. The bloom comes in February, hence its importance is evident.

*Ant gonon leptopus* (Rocky Mountain rose) is another plant which attracts bees in crowds.

It is a nearly hardy vine, a rapid grower, covering itself with rosy carmine bloom, and should be planted in waste places in Florida, and allowed to run at will.

In February I visited a spot that was literally ablaze with the golden color of the bloom of the lovely yellow jessamine (*gelsemium*). There were bees in abundance; but whether they were getting honey or pollen I could not tell, because the flowers were all a little too high.

I thought of the poisonous honey we hear of sometimes, and recalled a remark I heard made by a thoroughly educated and experienced physician of North Carolina. Said he, "I have made a study of the poisonous-honey question, and have long been convinced that there is no such thing as poisonous honey. It is true," said he, "there have been many instances where persons became ill after eating honey; yet I have never known or heard of a death that could undoubtedly be traced to that cause. And it is also true that there are some with whom honey *invariably* disagrees; and many who, *knowing* that it disagrees with them, forego its use entirely, or eat of it sparingly, just as they should of that, or any thing else, which they find unsuited to their digestion."

In some cases eggs, no matter how prepared, will bring on bilious colic; and in others onion sauce produces a similar effect; and I once knew an illness of several weeks following an attack of colic produced by eating onion sauce, and very little of it.

So in view of these facts and of the great quantities of honey consumed every year, in which there must be more or less jessamine honey, if it is a honey-plant, does it not seem probable that the physician's conclusions are correct, and that there is no universally poisonous honey any more than there are universally poisonous eggs or onions?

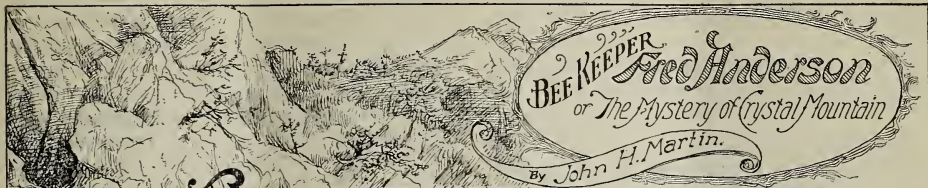
Orlando, Fla.

[The physician's remarks in regard to poisonous honey are doubtless generally true. Notwithstanding, I think honey is sometimes gathered (especially wild honey) that would make all or nearly all who eat it sick—see the incident mentioned in the ABC book. It is not certain, however, that this honey comes from laurel. My impression is, that the laurel might, in certain localities, or perhaps in certain seasons, produce a honey that would make all or nearly all who eat it sick. There are plants like the poison ivy that poison the majority of people who touch them. If the poison ivy should produce honey, and this honey were eaten as food, it would be quite likely to produce some effect. My impression is, however, that there is very much honey called poisonous by mistake, and the doctor has the right of it in the majority of cases.—A. I. R.]

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*If you would like to have any of your friends see a specimen copy of Gleanings, make known the request on a postal, with the address or addresses, and we will, with pleasure, send them.*





ALFARETTA!" exclaimed Fred, in an excited tone.

"An angel to our rescue," said Matt, at the same time; and they jostled each other as they struggled to peer through the deep and intricate crevice, and both lost their hold upon the

slippery chalk, and were nearly submerged again.

"Fred Anderson, where are you?" shouted a strong voice beyond.

"Mr. Buell," said Fred and Matt joyfully.

Fred shouted through the crevice, "Mr. Buell, we are juggled in here, and are unable to get out; but hold your boat outside a few minutes and I will tell you what to do. Now Matt," said Fred, with an air of business, "I have an impression that there is a larger opening out, to the river a few feet below us. The water is so turbid we can see scarcely a foot into it; but I think I shall chance a dive to find out."

"Misther Fred, I don't wish to interfere with yer plans; but it may be a parilous undertaking; there's false pockets and channels, as you know, and a chance fur yees to get into one and niver come out. Now, Fred, it's meself that's a poor plain Irishman, and not of so much use to the world as yees are; let me do the diving; and if it comes to the worst, me body'd betther be food fur fishes than yer own good self."

"My dear generous Matt," replied Fred, with much feeling, "this is my plan, and I am the one to carry it out; besides," said he, with a touch of bitterness, "it is better, perhaps, to become food for fishes than to love—" Here he paused; "but, Matt," said he, resuming, "there's one bright ray of hope. If I cross to the other shore, and in the sweet by and by meet her we'll never part, for there's joy and no lunatics in heaven." With these words Fred dove quickly under the water.

"God bless him," said Matt: "and may the saints speed his parilous journey to a successful ending."

Fred felt his way rapidly down the fissure; and, as he expected, it opened cut wider at the

bottom. After a few bumps upon projecting rocks he followed the dim light that now penetrated the water, and soon came to the surface about ten feet from Mr. Buell's boat.

"Why, Fred Anderson! where did you come from?" said Mr. Buell, his eyes starting with surprise; and he pushed his boat over to the aid of his struggling friend.

"Ha, ha! been to see the mermaids, Freddy?" shouted Alfaretta. Then as the stern of the boat swung up to Fred she sang:

"I would be a mermaid fair;

With a comb of pearl I would comb my hair;

And still as I combed I would sing and say,

'Who is it loves me? who is it loves me?'"

At any other time Fred would have shown embarrassment under this query; but just now he was struggling to regain his breath and expel water from his breathing-passages. As soon as he had regained the command of his voice he told Mr. Buell to shout into the fissure to Matt Hogan. Matt had been anxiously waiting, and the moments seemed long drawn out. When he heard the call he gave a joyful shout, and in a few moments he too had performed the diving act and was struggling for breath a few feet from the boat. Taking them in tow Mr. Buell rowed them ashore. They were much exhausted upon reaching solid ground; but as soon as Fred could do so he said, "Mr. Buell, how did you know we were in that pool?"

"We were rowing up the river toward the Ghering landing," answered Mr. Buell, "and saw you at work on the chalk butte, and then saw you both suddenly disappear with your arms in the air, and a cloud of dust puffing up. Alfaretta gave a cry of alarm. I knew your shelf of chalk had given way, and that you were somewhere below. I rowed as fast as possible to your rescue, but I was delayed several minutes by the bee defenders of the cliff. I had to arrange to the boat-awning the mosquito-netting which you know we always carry as a safeguard against river insects; and not till we were well protected could we make further approach. I came up to see you transfer the bees, and tell you about the meeting at the Dawson ranch; but I think you will not feel much like work or conversation until you change your clothing and have a good rest; so I will go home and come up again to-morrow."

"Mr. Buell, I can not express in words my gratitude to you for your timely aid."

"An' it's mesilf too, Mr. Buell, that will keep yer mimory as graan as the shamrock of old Ireland."

"Thank you, friends," answered Mr. Buell; "it has given me great pleasure to aid you, and to be so providentially on hand."

'Behind the dim unknown  
Standeth God, within the shadow, keeping  
watch above his own.'

"Now, friends, *adios* until to-morrow."

"A very foine man that," said Matt, as the boat receded, "and a foine sprig of a leddy; too bad intirely she's so mintally unbalanced." □

Fred had the same thoughts, but with feelings that were stirred to their profoundest depths. Turning to Matt as they walked, Fred pointed to the receding boat and said, "Matt, how would you feel if your Biddy Malooney were mentally unbalanced like that young lady?"

"Fur the love of Heaven, don't, mintion it," cried Matt; and with an expression of agony in his face he said, "Sure, Misther Fred, I'an know I'd be a lunatic mesilf."

□ It was well toward evening before Fred felt like doing more work; and then he put in his time languidly picking up the odds and ends of boards and frames that will accumulate even in a small apiary.

A night's rest gave Fred the necessary renewal of spirits for the next day's work, and the first steps were to the bee-cave.

The mattock was luckily sticking in the chalk where he had left it when he turned to laugh at Matt's antics. The hats and attached veils were floating in the dark pool twenty feet below; and to get them, Fred thought of Matt's fishing-tackle, and immediately started for the ranch for those necessary implements.

Matt was eating his mush.

"Good-morning, comrade," said Fred.

"The same to yersilf, Misther Fred." □

"Well, Matt, did you wake up this morning thoroughly disgusted with the bee-business?"

"Faith, an' I did not; nayther did I go to bed disgusted; but I tell yees I am disgusted wid the ridiculous jumping-jack I made of mesilf, an' all because a baa was making a proclamation on me backbone."

"And, Fred," said Mr. Ghering, with a twinkle in his eye, "do you know Matt vas disgusted too wid your politics? He say you try to make von Prohibitionist of him; but you give too much dose—too much water at von grand splash."

"That is too bad. While I should like to see him a good Prohibitionist, I did not mean to drown him; and to prove it to you I wish to get a strong rope to hang into that pool; then if we fall in again we shall have a way of escape. And, Matt, I want your fishing-tackle with which to fish out our hats and veils."

Having obtained the articles needed, and submitted pleasantly to further chaffing from the men, he returned to the butte. Hats and veils were fished out with the hook and line, and the rope hung into the well, with the upper end thoroughly secured. Before the bees were stirring, a new path a little deeper into the chalk had been cut, and transferring operations could be resumed. It was a busy day on the ranch, and Matt could spend no time as a helper and learner, and Fred went forward as rapidly as possible alone with his work.

Having in mind his previous day's experience, Fred approached the next chalk-hive pocket with some trepidation; but having in mind his rope way of escape his confidence returned, and three transfers were successfully made during the forenoon.

Fred's late and hasty lunch was slightly interrupted by the arrival of Mr. Buell, veiled, gloved, and with a pair of old stockings drawn



ON SHORE AGAIN.

over his shoes, and tied securely around the ankles.

Fred laughed when Mr. Buell approached.

"I see," said he, "that you have profited by Matt's experience, and mean to leave no place for the entrance of bees."

"Forewarned is forearmed," said Mr. Buell; "and, Fred, I have found bees in one of the old sycamores near my place; and if I can learn how to transfer I will try them for an experiment."

"It is very easy after getting confidence," replied Fred; "but, like every thing else, you must have practice; and, as Matt expresses it, your knee-caps will rattle a little at first."

When they approached the cliff Mr. Buell remarked that he would prefer to take his first lesson where there was less danger from drowning.

"No danger now," said Fred, and he pointed



to his rope way of escape; but Mr. Buell approached gingerly, and could hardly be induced to approach the deep and forbidding pool near enough to peer into it. After cautiously doing so he retired to a safe distance. He shudderingly remarked, "I should think you were juggled yesterday. Indeed, it was a providence that sent me to your rescue."

Mr. Buell secured a safe place from which he could closely watch the transferring process. He was not only an observing man, but quite a genius; and after a few moments' observation, and noticing the shape of that individual pocket, he had an idea, and tried to impart it to Fred; but the head of the latter was in such a roaring vortex of bees that not a word could he hear, and Mr. Buell wisely concluded to wait his talking until he was in a more quiet place. The transfer was successful, and, after placing the hive in the apiary, a little rest was taken under the sycamores.

Here Mr. Buell made haste to impart his new idea.

"Fred," said he, "why don't you cut clear around one of those chalk pockets and take it up bodily? That would save transferring, and then you would have the bees in beautiful chalk hives—a clear saving in lumber, paint, and no end of trouble."

"But," said Fred, "those pockets are not all of the same size and shape; and, furthermore, they would have to be transferred in order to get them into these frames; and our new system of management could not be performed without them."

Mr. Buell did not like to give up his idea, and said, "Well, if you wish to use frames why not clean the chalk and make your hives the same as wooden hives? I believe the plan will work."

"All right," replied Fred; "I should like to see you make a durable chalk hive; and when you succeed I will be the first one to use it."

"I see you are skeptical about the success of my chalk hive. I shall have to convince you by making one; but I have another idea. Why not use chloroform to subdue the bees while transferring? You can stupefy them to unconsciousness, and then there would be no fear from stings. Why! I believe a bottle of chloroform properly applied would stupefy all of the bees in the cave."

"In the absence of the drug," said Fred, "I prefer to practice the good old way. Mr. Buell, you are directly on the beaten path of all beginners in bee culture. You wish to get up new inventions before testing thoroughly the ones we have."

Again Fred led the way to the chalk cliff for another transfer. Mr. Buell advanced a little further this time, and was of some material aid. A very good day's work was accomplished, and, Mr. Buell was so well protected that he received but one sting, and this one

upon the knee, where the pants were drawn tight; but he did not complain over this trifle; and after four o'clock, when the work was completed for the day, and seated upon a box by that strong work-bench, he unfolded his plan for a meeting at Dawson's.

"There were forty persons in attendance at Dawson's funeral," said Mr. Buell; "and after the obsequies I quietly canvassed the opinions of those present, and found them quite agreeable to a meeting next Sunday. Several were quite enthusiastic at the idea of starting a Sunday-school. They had been debarred from such privileges for several years. As one woman quaintly put it, 'I hain't been nowhere on Sunday in five year; it's drudge, drudge, from one end of the year to the other; and I feel as if relapsin' into heathenism.' Even those who do not accept Christianity are anxious for the agreeable change a Sunday-school and religious services will bring. I look upon this opportunity as one of far-reaching interest to not a few children in that neighborhood. There is hope for even the Dawson children, ragged and unkempt as they are. I shall want you to play the guitar and lead in the singing. It will be a great help to the cause; and, Fred, can you not induce Mr. Ghering and the men here to attend?"

"I recognize all you say about the work to be done," said Fred, "and will do all I can to aid you. I think some if not all of the men will attend from this ranch."

Then Mr. Buell and Fred parted for the day, with schemes of a high and unselfish order uppermost in their minds.



#### UNITING NUCLEI AND AFTER-SWARMS.

**Question**—Having some nuclei and light after-swarms that do not have sufficient bees to winter as they are, I desire to know what is the best way for doubling up, or uniting, two or more nuclei or after-swarms, in the fall, preparatory to wintering? When is the best time to do it?

**Answer**.—The time of year to double up weak swarms, or to unite nuclei, is just as soon as the bees cease to gather honey and you have the extra queens disposed of as you wish. The last half of September and the first half of October is the time when I unite the most of my nuclei, or small colonies, if I have such. The sooner it can be done after September 10 to 15 the better, for then the bees are given more time to fix their stores and hive in the shape they wish them for winter; and the nearer these things are to what they would be in a

full colony which has had all summer to prepare for winter in, the more assurance of successful wintering we have. A hive which has its combs all overhauled after the 15th of October, and put back promiscuously, is in poor shape for winter, as the nest prepared for winter, with unsealed honey surrounding it on all sides, is thrown out of shape and made as uncomfortable to the bees as a bed would be to a man were it thrown over a pile of stones, instead of being smoothly placed over a mattress, and that mattress resting on woven wire springs. No disturbing of the winter-nest of the bees should be done later than October 15th to 20th, unless it is a positive necessity, north of 40° north latitude.

Well, how shall we unite? The old way, and the one adhered to by very many still, is to move the hives gradually together by moving them a few feet each day, or after the bees have had a flight each time, till the nuclei are gotten close side by side, when both colonies are smoked thoroughly, and the bees caused to fill themselves with honey by pounding on the hive, or otherwise roughly using their home. The bees, being filled with honey, are not liable to quarrel, especially if they are mixed by interchanging frames when putting them in the hive in which they are to stay. Put in their permanent home only such frames as contain the most honey, and place the fullest frames near the outside of the hive; and those containing the least, in the center. This leaves them more nearly in the shape a full colony would be in when undisturbed, and causes the bees less work in getting their winter quarters arranged. After having all the combs that the hive will contain, in the same, shake the bees off the remaining frames in front of the hive, shaking frames from alternate hives each time, so as to mix all the bees thoroughly as they run in. If any bees stick to the sides of the hive, brush these out also, that all may go into the hive together.

If you have not disposed of all the queens but one, you should do so before uniting, keeping the one which is the youngest, and therefore liable to be the most prolific, where you can have your choice to do so.

Probably there are more bees united by this plan than by any other known; still, I have always considered it as slow and tedious, not giving any better results than a shorter plan which I have adopted for the past few years, which is as follows: When the time comes to unite I select the hive having the queen I wish to retain, as the one to contain the united colony. I now open this hive and take out what combs I think will be necessary, leaving those containing the most honey, or otherwise, as the circumstances may direct, although it is seldom that united colonies have too much honey, when those which are left, being sure the queen

is on one of them, are placed next one side of the hive, as closely together as I wish them to be left for wintering.

The bees which are on the combs to be taken are now shaken off the combs and allowed to run into the hive, when, after closing, it is left as it is, ready to receive whatever is to be united with it.

I next go to the one or more colonies which are to be united with this first one; and if they have a queen she is hunted out and disposed of as I desire, when all of the frames are removed but one, two, or three, in accord with the number of bees there are in this colony; few being so small that only one comb is left, and in no case is a colony weak enough in bees to need uniting, unless they can all crowd on three combs fixed as I am about to tell you.

The combs left are generally those containing the most honey, although some years there is little choice of combs on account of all being liberally supplied with honey. The combs (two or three) are now spread apart from 1 to 1½ inches, and placed in the center of the hive, when the hive is closed and the bees shaken off the combs taken out so that they can run in with those left on the spread-apart combs. I fix any others that are to be united in the same way, in some cases putting as high as four or five in with the one having the queen, but not usually more than one, two, or three, according to the number of bees each contains.

I now wait till some cool, cloudy, raw, windy day, or some morning when there has been a frost, or nearly so, when I am ready for the uniting, which is very simple. The hive having the queen is uncovered; or if the cover is a mat or quilt, this is rolled back till the comb next the vacant side of the hive is exposed, when I go, smoker in hand, to those ready to be united with it, blow a few dense puffs of smoke in at the entrance, quickly uncover the hive, blow in freely of smoke over and around the three spread-apart combs, when I place the first finger of each hand between the first two combs; and if three, the big fingers between the next, when the third and little fingers clasp over on the outside of the outside frame, the thumb tightening on the other side at the same time, when the three frames, bees and all, are lifted out all together and carried to the open hive, having the queen, and all lowered into said hive in a body, the same being placed close up to the side of the exposed comb. The quilt is now rolled over all the frames but the last, when another and another lot is brought in the same way till the required number are in, when the hive is closed and the uniting accomplished.

If the day is cool and raw enough, or the night before has been cold enough, the bees which are to be carried will all be compactly clustered on and between the spread-apart combs; and after you get the "hang" of the



thing a little you can carry them where you wish, without any flying in the air or being left in the hive. Why only three combs are to be left under any circumstances is that a person can not grasp more than these with the hands; and to separate the clustered bees in any place is to make a bad job in losing bees and have them fly all over you and out into the cold to perish. By removing the hive and stand from the old location no bees are lost by returning, although some will return and hover over the old spot on the first flight for a little time; but you will soon find them with fanning wings at the entrance of their new home, which they accept ever afterward.



#### HOW TO SEND MONEY, ETC.

On page 655, in regard to sending goods when money is lost in the mails, I will ask if, when you send money in a letter without an order or other safe way (if you ever do), do you ever think the party to whom you send it ought to stand any of the loss? For my part, I do not. I very seldom send money without sending in a safe way; and when I do, it should be just the same as any venture—at my own risk; and while it is a kindness on your part to send the goods and bear part of the loss, is it justice to yourselves or to others who pay for a safe way to send money, as profits must cover all losses? Please do not think I want to criticise, but simply to give the other side of the picture.

Linn, Kan., Sept. 14. J. T. VAN PETTEN.

[I thank you for your frank statement of your views as to the money you have lost. Your plan is one I have followed all my life. We send small sums by mail, without any precaution, and all my life I have had more or less losses—perhaps one letter in five or ten thousand. When such loss occurs I send the money again, as a matter of course. If the person to whom it goes is liberal enough to stand part of it, we accept it with thanks. Some of our customers flatly decline to let us share any such losses. Out of courtesy, however, we almost always offer to bear our part, even though we are not to blame. Where a man sends five or ten dollars loose in a letter, however, we really can not undertake to help him out—at least not very much, for he has been foolishly reckless.—A. I. R.]

#### BANANA OIL OFFENSIVE TO BEES.

On page 570 R. W. Riddle tells of banana oil making bees cross. I have never made banana oil or heard of it before; but about a year ago, on several occasions when I had eaten a banana just before examining my bees, and still had specks of it on my hands, I was always unusually attacked. I also noticed that the smell of a banana, especially if it was getting overripe

and soft, was almost exactly like the smell of the poison the bee emits on stinging. I therefore came to the conclusion that the smell infuriated them. Mr. Editor, try it yourself; discard your veil, rub your face and hands well with juicy decaying bananas, and see the result.

Kingston, Jamaica, Aug. 26. MONGOOSE.

#### QUEEN-CELLS POINTING UPWARD.

*Mr. Root:*—We have six colonies of bees, and they all build their queen-cells on the upper part of the combs. They are a little larger than a worker-cell, and about twice as long, point upward. I do not see an answer to this question in your A B C. It says that they build them on the lower edge, and they point downward.

CONRAD HAAS.

Pine Castle, Fla., Aug. 20.

[If your combs have never been reversed, and the cells are generally built near the top, pointing upward, it is very unusual; at all events, I do not know that I have ever heard of a case before—certainly I have never seen one. I have seen cells built many a time near the top edge, and all over the comb, in fact; but there was nothing unusual in that; but that their points should actually be upward is certainly something out of the ordinary. I should be very glad to know whether any of our other readers have observed any thing similar.—Ed.]

#### BIRDS AND BEES; BEE-STINGS IN THE LINING OF THE STOMACH.

I have just been looking up the A B C of Bee Culture and a score of other works on apiculture, but fail to find in any of them any mention of the fact that the stings of bees are ever found in the stomachs of the birds accused of eating them. Some assert that the birds consume drones only; others, that they extract the stings first, or else swallow the heads only, while in the A B C of Bee Culture you suggest that the birds have a way of crushing their prey with their bills so as to prevent the possibility of the bee's using its sting.

Now, I have watched this matter very closely for many years, but it is only within the past week that I have discovered any thing very definite. Two days ago I noticed a bird called the green oriole devouring bees wholesale. Sometimes it would settle on a hive and snatch up a bee; at other times it would dart from some convenient perch and catch a bee on the wing; but most frequently it would settle in the peach-trees, which are now in full bloom, and either catch a bee as it alighted on a blossom or as it flew from flower to flower. I did not allow this pastime to continue very long, I can assure you, but shot the voracious little fiend; and on opening it I found fifteen stings in the lining of the stomach, sticking into it just like pins in a pin-cushion, some of them very firmly implanted, and imbedded almost up to the head. I sent the stomach to the Government Entomologist, and expect a report from him in a day or two.

Yesterday I shot another of these birds, and found five stings attached to the stomach lining; but one that I shot to-day had no fewer than 27 stings imbedded in its stomach, and also one sting with its poison-sac attached, sticking in its throat just at the root of the tongue; it, however, was attached so slightly that I think the bird would very soon have succeeded in swallowing it. None of the stings in the stomach had the poison-sac attached; but the stings, being less digestible, had evidently resisted the process, and I'm sure that many of them had been in the stomach for a day or two, and certainly long after all trace of the rest of the bees had left the stomach.

We have one or two other species of birds that have recourse occasionally to a bee diet. The martins are wicked depredators in this respect; but their visits are so rare, and they are so easily decimated, from their habit of perching together in a row, that they don't give much trouble. In 1889 I also noticed our common magpies at the entrance of the hives, most unceremoniously gobbling up bees by the score; but since then, although they are here in large numbers, they have not interfered in the least. I now intend to shoot a number of these birds some distance from the apiary, and examine every one; for I have a suspicion that they may be regaling themselves at my expense on the distant flower-laden tree-tops.

H. L. JONES. □

Goodna, Queensland, Australia, July 31.

[A diet of beefsteak is a boon to the sick, but a diet of *bee-stings*—I beg to be excused. It is a wonder that the stings do not kill the little fiends. I formerly supposed that they succeeded in crushing the bee before it could protrude its sting.—ED.]

#### A "GOOD ONE" ON DR. MILLER.

Referring to your discussions with Dr. Miller, in *Stray Straws*, Sept. 1, about "separating the sections from the wood," etc., the doctor evidently has that peculiarity of expressing himself or of construing language; for he gives himself away in the very next straw, thus: "I went straight and put a pan of salt in the water." Now, any reasonable person knows that tin will not purify water; neither did GLEANINGS claim that it would; neither do I suppose that Dr. Miller tried any such thing. I only suppose that he emptied the pan out of the tin. However, the doctor has got the advantage of us, for he has got incorporated into the English language through the Funk & Wagnalls Standard Dictionary, definition No. 7, for "section," making it "the little frame put into a hive for storing surplus honey, in which frame it is also marketed; also the honey which is in the section." Thus he has us down. The authority of Dr. Miller, writer of *Straws*, we may question; but the authority of Dr. Miller, writer of definitions in the Standard Dictionary, we may not question, whether we would or not.

Referring to your article about drawn comb for sections, and your prediction that a foundation with  $\frac{1}{4}$  to  $\frac{1}{2}$  inch depth of cell will soon be produced—also with reference to what Baldrige says in comment in *A. B. J.* for Sept. 1, when such comb (or foundation) has been produced will you withdraw your protest to the "Wiley lie" about artificial comb, artificially filled, etc.? That would be a long stop toward it.

A. NORTON.

Monterey, Cal., Sept. 11.

[When the new comb shall be produced it will not be necessary to withdraw our protest or fight, rather, against the "Wiley lie," because there is a "heap o' difference" between empty drawn comb and artificial comb honey filled with glucose and capped over with appropriate machinery, such a product so perfect that it can not be told from the genuine. To make foundation with full-depth cells is one thing, and to fill it with glucose and cap it over as perfect as the bee is quite another.—ED.]

#### BEE-ESCAPES, VEILS, SMOKERS, ETC.

By all means, use bee-escapes to take off supers; if all those who do not use them would try a few they would soon be convinced that they are one of the greatest helps in the apiary.

Always have a bee-veil ready to use in less than a minute's notice. Although I hardly ever use one, there are instances when I need one very much, and in some cases it is almost indispensable.

A good reliable smoker is also a most necessary tool to have on hand. The right use at the right time with the right fuel makes all the difference between the crossdest and the most gentle bees; between obstinate and submissive ones. I am favored with a physical constitution that is very little affected by stings; and I wonder sometimes, when reading these reports in GLEANINGS, how different individuals can be so completely overcome by a few stings. I can not say that I like bee-stings or that I did not use all reasonable precautions to keep from being stung; but if I can not prevent it, I smile at the inevitable; a little unpleasant burning sensation for a few minutes is all I suffer unless ears or eyelids are the recipients of these love-taps, and even then it has no lasting effect. When working in the apiary right along, there are days that I do not receive a single sting I know of; and, again, at other times, more days pass that I would consider very quiet days if I did not receive from ten to fifteen or more stings a day.

A tripod, suggested by F. Greiner, is a handy device in the apiary to temporarily hang up swarms in the hiving-box. It can be set wherever it is needed. I use one made of three bean-poles, fastened together at the top, and three braces nailed six inches lower around them. These latter serve to give the necessary strength, and at the same time furnish places to hang the box.



□ Now is the time to prepare for a good supply of drawn-out sections. □ For ten or fifteen years I have considered these of great importance to increase the honey-crop, and have used them accordingly. □ If supers are not crowded too closely, but have plenty of room, more than we expect them to finish, we shall undoubtedly have more unfinished sections left, when the season closes, than we should have if finished sections had been our aim and less space been given. But is it not advisable and profitable to sacrifice a few finished sections of dark honey this fall, when we can produce thereby several times that amount of white honey next spring?

All sections, which are to be used in this way next season must be cleaned by the bees before being stored away. They must be kept in tight dark places to protect them from dust, insects, and all impurities, if we expect our bees to accept them readily.

E. C. GREINER.

Naples, N. Y., Aug. 22.

#### A CORRECTION.

GLEANINGS for Sept. 1st is at hand. I am very much pleased with the illustration; but your artist has made the blunder of representing the hiving-box wrong way up, and placing the handle over the opening instead of its side, where it belongs. A swarm could not get into the box very well when dropped on its side.

Naples, N. Y.

G. C. GREINER.

THIS REMARKABLE SEASON; EARLY CROPS IN THE SOUTH AS WELL AS IN THE NORTH.

Farmers in my vicinity have picked out and sold thousands of pounds of cotton in August, which is a month earlier than I ever knew cotton picked with us.

MRS. M. M. OATES.

Hayti, Mo., Sept. 3.



J. H. H., *Neb.*—Honey from a hive that has had foul brood is not injurious to human beings; but such honey should not be given again to bees without first boiling it. It is through the honey that the disease is transmitted from one colony to another, in the generality of cases.

W. V., *Ariz.*—In California nearly all the extracted honey is stored in galvanized iron tanks; but these hold a great many barrels. The galvanized tanks holding 200 gallons would be stronger, and last a great deal longer, and would not rust. Taking every thing into consideration, we should prefer tanks of galvanized iron.

J. H., *Ga.*—The albino bees are nothing more nor less than sports from common Italians, and

have been produced by selecting the lightest stock and breeding from that stock. By continuing this process a lighter color will be secured in time. Albino stock can be produced quicker from Holy Land or Cyprian bees. Carniolans are from Carniola, a province in the southwest of Austria.

W. W. S., *Pa.*—We should be inclined to think from your letter that you have real foul brood. In typical cases of this disease, the brood, as a general rule, dies before it is capped. We would advise you to treat by the foundation plan recommended in our A B C book and catalog. The honey can be utilized, providing it has been boiled for at least a minute or two. It can then be fed to the bees, or you can use it on the table. The sooner you treat, the better. We would advise you not to fuss with carbolic acid.

P. A. N., *Iowa.*—(1) We set it down as a rule that bees will not swarm unless they have a queen or something that they recognize as such, and I hardly think it possible that your bees would swarm without one. As to moving your bees six rods (2), you should wait till after the honey season, because you will disturb them so much now that it will cost you a good deal more than the shade will be worth. (3) I would not advise you to leave the farm. Better stay where you are. Depending on bees as a sole means of livelihood is very risky. Only a very few in the United States do so, and even they have become discouraged and disgusted. The seasons are too uncertain. Bees do very well when run in connection with some other business.

C. F. C., *Wis.*—We are still in position to supply lamp-nurseries, such as we used to advertise. You can get almost the same result much cheaper, and quite as satisfactory, by having two good-sized tin pails, one inside of the other. Of course, the inner pail should be smaller—enough so to leave a water-space about one inch wide between one pail and the other. The smaller pail should be supported. Put the queen-cells into it, and cover with a large cushion. A common oil-lamp placed beneath the large pail will keep the water at the proper temperature. The lamp-nursery that we formerly sold was made to take brood-combs, and was made square like a hive. This is not essential; and when we were using the nursery we never used the full combs. The cells were cut out and placed on a cushion or cloth in the bottom of the nursery. As it was inspected every few hours, the queens were taken out as fast as hatched. In answer to your question, I would say that I hardly think there will be any marked difference between queens hatched in a nursery kept warm by artificial heat and those hatched in wire-cloth cages put in the center of a brood-nest. If any thing, the difference would be in favor of the latter rather than the former, as you seem to suppose.



MR. DANZENBAKER, who has been using his new hive in Benzie Co., Northern Michigan, since the middle of July, informs us that, although he was a month too late for the season, he secured 1100 lbs. of No. 1 white comb honey from 15 colonies. He exhibited the same with his hives at the State Fair at Grand Rapids, Mich., in what was considered the best exhibit ever made by the society. He received three first premiums—one for the best honey, considering quality and manner of putting up for market; also a special diploma for the best beehive.

Geo. T. WHEADON & Co., a commission firm of Chicago, boast of being "the largest honey-dealers in the West;" but the editor of the *American Bee Journal* says he "never before this year heard of them as honey-dealers or even as general commission men." They are certainly new to us; and while they may be all right I don't like the way they take of getting patronage. They are sending out circulars broadcast, quoting honey and beeswax far too much above the market. They boast of their bank references and commercial rating; but even these do not necessarily signify that they will do as they would be done by.

*Later.*—We discover that this same firm have copied into their circular, word for word, a couple of paragraphs from our catalog on how to pack honey. They probably failed to observe that the matter was copyrighted. This appropriating printed matter without credit or permission may be only a straw, but perhaps it shows which way the wind blows.

THE last number of the *Pacific Bee Journal* (quarterly) is a pleasant surprise. It contains 44 pages, including a tinted cover; is well printed and handsomely illustrated. On the front cover page, in half tone, nicely worked up, is a pretty group view of the editor, "his queen and little queen." The subject-matter shows enterprise as well as work on the part of its editor.

It is unfortunate that such a good start-out should be marred by the publication of an open letter from the editor directed to and attacking one of California's leading bee-keepers, Mr. Geo. W. Brodbeck, of Los Angeles—a man whom we have found to be the very soul of honor. Among California bee-keepers none stands higher. Elsewhere in the same journal is a paragraph that evidently refers to the same man in any thing but complimentary terms, accusing him of slander to gain his ends. Personalities of this kind, wherein the public can have no interest, ought to be kept out of print.

#### A NEW USE FOR BICYCLE PANTS-GUARDS.

DID you ever try bicycle pants-guards to keep the bees from crawling up your trowsers? I have, and they work admirably. I usually go to our out-yard, as you know, on the wheel; and as I can not afford to take time to put on short pants I slip on pants-guards and mount the wheel. Arriving at the yard I leave the guards on; and whenever it becomes necessary to shake bees from the combs to get cells, or for any other reason, I shake and nary a bee can get up my pants-legs.

The bicycle pants-guards I refer to are what are known as the Ostergrens. They are simply steel bracelets, as it were, that just slip over the pants, pressing the folded edge snugly against the ankle. These guards can be purchased at any cycle store for about 25 cents a pair. I am not sure but they would be a legitimate article for the bee-supply dealer to handle.

#### THE LINCOLN CONVENTION, OCT. 7, 8.

GOING to the Lincoln convention? Yes, both A. I. R. and myself expect to be present. Our route as now mapped out is via the Lake Shore to Chicago, and from that point to Lincoln via the Rock Island. We pass through Toledo at 2:5 P.M., Monday; arrive at the Lake Shore depot, Chicago, at 9 P.M. At 10 P.M. the same day (Monday) we take the Rock Island train No. 5; pass through Des Moines at 8:20 A.M. Tuesday; through Council Bluffs at 1:5 P.M.; Omaha at 1:35, and arrive at Lincoln at 3:35. We specify the route and the time of reaching the different places, hoping that our train may take on bee-keeping friends who might like to join us. We are in *hopes* Drs. Mason and Miller will be members of the "crowd."

The program is one of the best that has ever been prepared; at all events I think I am safe in saying that no secretary ever spent more time than Dr. Mason in getting up a program for the N. A. B. K. A.

No other locality has ever offered the N. A. B. K. A. such inducements. Why, just think of it! Pay your fare one way, add \$2.00 to it, and that is all the expense. The generous Nebraska bee-keepers are going to afford free entertainment for all those who come from outside of that State. Such a "pace is terrific," to use bicycle parlance, and it will be difficult for other cities to keep up. If the association ever comes to Cleveland, our nearest large city, we will be ready to bear our share of expense.

#### A. I. R. adds the following:

Dear friends, I fear the attendance, especially of the veterans who have from year to year been on hand, will be somewhat slim. I may be disappointed, however. The stringency of the times, and long distances, are both discouragements. But let me say that, inasmuch as the old standbys are dropping off year by year,



it is well for us to make an extra effort to be on hand, not only because we are sure to have a good time, as we always do at those pleasant reunions, but because it is a duty we owe to our younger ones and to our nation. Those who live near by, say in adjoining States, will certainly—at least I hope so—make a great effort to be on hand. Please remember, dear brother and sister bee-keepers, that it is only once in a number of years that this national convention swings around in your locality—perhaps only once in a lifetime. You take and read the journals, and that is well; but it is worth ever so much more to meet face to face with those whom you have known only through print. You will enjoy their writings ever so much more afterward. Why, when I read Dr. Miller's *Straws* it seems every time as if I could see his face and hear the tones of his voice; and the same with Dr. Mason and ever so many others. Besides, by friendly meeting and friendly talk we cheer and encourage each other. We get over prejudice and warped judgment; and if you will permit me to drift a little into the theme of my talk in this present issue, let me say that we unitedly crowd out Satan and invite the refreshing influences of God's Holy Spirit. Now, please be on hand if you can possibly manage it. Remember, your old friend A. I. Root wants to see you, even if nobody else does; and there will be a good crowd of good people. If we don't find them at Lincoln it will be the first disappointment of the kind I have ever found at a national convention.

#### THE NEW WEED-PROCESS FOUNDATION AT THE MICHIGAN EXPERIMENT STATION.

In the *Bee-keepers' Review* for September, experimenter Taylor gives the results of a third series of experiments regarding the various makes of foundation placed in comparison with the Given, which has heretofore shown superiority. In the last series of experiments the new-process Weed foundation was placed in the test, in regard to which Mr. Taylor says:

The showing made by the new-process foundation is very favorable indeed—a very gratifying fact, since the increased facility in manufacturing gained by the new method will have a strong tendency to decrease the price of the product.

But it seems it does not quite equal the Given wax—that is, that made on the Given press, for he says:

In each case the Given foundation, as generally heretofore, shows a superiority, but in a greatly reduced degree.

It appears, then, that the new-process wax has brought down the degree of the superiority of the Given very greatly—so much so that they are practically equal. Now, then, if Mr. Taylor could have had wax sheeted by the new process, and put through the Given press, I feel morally certain that wax sheeted by the old dipping process, and run through the press,

would have been greatly inferior. In other words, *Weed sheeted* Given would have shown decided superiority over *dipped* Given.

The test that Mr. Taylor has made, as it is, is very gratifying, showing the marked superiority of the new-process wax.

The former experiments have shown that, on all dipped wax, the press gives a foundation that is more readily worked by the bees; but the operation of the press is so slow in comparison with the rolls that it would be out of the question with a large manufacturer.

Assuming, then, that the Given-press foundation, other things being equal, is more workable than the roller foundation, why is it that manufacturers do not adopt it? Simply for the reason already given, that the press is too slow. By our new process, the sheets come out of the foundation-machine, are cut and trimmed automatically, picked up, papered, and piled as square and true as it can be done by hand, and at a pace that would astonish you if you could see how fast it is done. After all, I am of the opinion that we could secure all the advantage of the press, providing we adopt the Given side-walls, and sheeted the wax *just thick enough to fill out those walls*, and no more; but these heavy side-walls, I have been told, make a perceptible fishbone in comb honey, and that would not be desirable; and hence the present light walls of the rolls would be much more preferable to the eater of comb honey, if not to the bees that make it.

Mr. Taylor makes a mistake in thinking that the new wax is sheeted by passing "between cylinders." While I am not at liberty to give the method to the public, I would state that the Weed sheeting-machine does not use a pair of cylinders to roll down the wax.

I trust that Mr. Taylor will be in position another season to repeat these experiments, and we should be very glad to furnish him with Weed sheeted wax to try in the press.

#### NEW-PROCESS FOUNDATION IN ENGLAND, AGAIN.

I have already given Mr. Thos. W. Cowan's opinion, to the effect that the new-process foundation is all we claim it to be, and here is an unsolicited testimonial from another British bee-keeper that speaks volumes for it:

Your Weed foundation, despite a strong prejudice in several quarters against it on its introduction, has literally taken the foundation market by storm. It has three great advantages over our home-made product: The bees take to it faster; there is more surface to the pound, with less liability to twist, and it is literally cheaper in most cases than English foundation. Its enemies have given it this last pull. There is also another point about it to be noted. It is of uniform quality, and the consumer knows that he is getting genuine beeswax with it. Even now I am selling quite a quantity of it at a steady rate, for "driven" bees. My own mill—I almost wish I had never invested in one—has lain idle for weeks. I shall soon have enough raw wax accumulated to make it worth while shipping it over to you to be made into Weed foundation!

F. SLADEN.  
Ripple Court, near Dover, England, Sept. 5.

## THE NUMBER OF APICULTURAL PATENTS.

THE *Official Gazette* of the United States Patent Office for May 12, 1896, contains these paragraphs on the subject of bee culture:

*Bee Culture.*—In this class 1001 patents have been issued. The first movable-comb frame for beehives was patented to Langstroth, No. 9300, October 5, 1832; and improvements thereon, disclosing simple and effective means for holding removable-comb frames in the hive were patented to Heddon, No. 327,268, September 29, 1885; to Shuck, No. 329,541, October 27, 1885, and to Danzenbaker, No. 547,164, October 1, 1895.

The first artificial comb foundation was made in Germany about 1842. An effective improvement thereon is the employment of a wire support embedded in the foundation, and patented to Hetherington, No. 208,595, October 1, 1878; reissued November 11, 1879, No. 8962. An artificial honey-comb was made prior to 1853; and on January 29, 1889, No. 397,046, to Aspinwall was patented one of wood, from which the honey may be separated in a centrifugal machine; and on August 30, 1892, No. 481,578, to Mason and Moskovitz was patented an improved process for making a honey-comb from wax.

I have before stated that the Patent Office is divided into departments, each department taking a group of subjects. Linked with bee culture is the industry of tobacco, the dairy, and farm-gates. The examiner of this department, I am informed, is the oldest man on the payroll of the Patent Office—a Mr. Collamer. Of the 1001 patents (a number that seems more significant than accidental) the department has seen fit to notice only a few, and that is the list as above given.

## THE ANNUAL CROP OF COMB AND EXTRACTED HONEY FOR THE UNITED STATES.

SOME two years ago I made an effort to get the manufacturers of section honey-boxes in this country to make a report of their output to Dr. C. C. Miller. My idea was that, if we could get all of them to give to him the number of sections they had made during the calendar year, we could make a sort of estimate on the amount of comb honey produced annually. Still better, if manufacturers would give their average annual output for a period of ten years to some one person, that person could figure very closely on the average annual amount of comb honey produced during that period.

Two years ago, when I tried to carry out this scheme, one of the large manufacturers refused to give their output. The consequence was, I had to give up my pet scheme for a time. But this year I have learned approximately the number of sections that were made in the United States during the past year. Making a liberal allowance for the fact that sections are under weight, so far as the amount of honey they hold, it appears that the amount of comb honey produced during this year in the United States is somewhere about 25,000,000 lbs.; and if there is as much extracted honey produced as comb, then the total amount of honey produced annually in this country would be about 50,000,000 lbs., or 25 000 tons. While this estimate may not be strictly accurate, it is far bet-

ter than the rough guesses that have been made from year to year, and far more accurate than the government reports.

Our stenographer thought I ought to deduct something for sections on hand, not filled with honey. There were thousands (and we might say millions (of sections of *last* year's output left over. These, by the law of averages, would balance the number left on hand of this season; but this year the number left over will be less than last, because, as I have shown, the season has been better.

## A QUEEN'S LONG CONFINEMENT.

SOME time ago, during the early part of the basswood flow, just for experiment I caged one queen by the Elwood plan. She was put into a Miller cage, without food of any kind, and set directly upon top of the frames. My object, of course, was to prevent that colony from swarming, as there was every indication that it would go for parts unknown in a day or two. Other colonies were forestalled in their intentions by a different procedure—generally by giving an unlimited amount of room.

Well, time went on and I had forgotten about caging this queen. I had taken supers off from this hive in the mean time, but did not examine the brood-nest, as the bees seemed normal. I ran across this particular colony, and there, very much to my surprise, was the queen caged, as lively as ever, having been confined there just two months. The bees acted normal, and I concluded that they must have raised a queen in the mean time. Examination showed that the combs were full of brood and eggs. They had evidently regarded the caged queen as they would one that they expected to supersede; otherwise it is doubtful whether they would have fed her. Two courses were open to me. One was to release the queen and let her take her chances with her daughter; but I concluded to put her into my pocket, thinking that, perhaps, I should find a colony that would need a laying queen before I got through. I accordingly closed up the hive.

The point that interests me particularly in this is that this queen bore close confinement in a little wire-cloth cage about  $\frac{1}{4}$  inch thick, 1 inch wide, and  $1\frac{1}{2}$  inches long. It goes to show that, if we could in some way give the bees and queens proper food when sent by mail, they would go through every time without loss. As it is now, a large percentage sent out for export die in the mails before they reach distant points; and even those that do get through are more or less feeble.

Well, I continued my rounds over the apiary, when, toward the last, I began to think that I should not find a place for my queen, because I had only two more colonies to look through. Sure enough, next to the last one was in a decidedly bad way, having degenerated into fer-



tile workers. Ordinarily, in such cases we prefer to give virgin queens or a cell, or break them up altogether, distributing the bees and brood among several good colonies. We have very often met with success in introducing laying queens; but this one I thought I would just let run loose among them. This I did, and had the satisfaction of seeing the bees circle about her in a friendly way, and even crawling up on top of each other, two or three bee-high, to look at her majesty. I closed the hive up, and expect all to go well; but I have a curiosity now to see how well this queen will lay after her long confinement, and how soon she will commence

#### THE POPULAR SCIENCE MONTHLY AND ITS HUMILIATION.

It will be remembered by our older readers at least, that the *Popular Science Monthly* has "put its foot into it" pretty badly in times past on the subject of bee-keeping. The first instance was when the great scientist Prof. Tyndall tried to tell in its columns years ago how the bees make comb. Said he: "The bees place themselves at equal distances apart upon the wax, and sweep and excavate," etc.; and the *Popular Science Monthly* did not know any better than to publish and indorse such twaddle as that. Some years later they published what is now known as the "Wiley lie," to the effect that artificial comb honey was a commercial possibility, and that there was very little genuine bees' honey on the market; that comb honey was made out of paraffine, the comb filled with glucose, and the cappings put on with "appropriate machinery." Of course, bee-keepers were disgusted, and sent in their protests; but that monthly paid no attention until that scientist and scholar, Allen Pringle, some years afterward, sent them an article explaining the absurdity of the whole thing. This they deigned to notice and publish.

Well, it seems that the editors of that scientific (?) monthly have again "put their foot in it." This time, fortunately for bee-keepers, the twaddle does not relate to our industry. The following editorial note, taken from *Electricity* for September 9, will explain itself:

It seems that the *Popular Science Monthly* has been imposed upon. Two of the faculty of the Leland Stanford University invented a hoax which was the photography of mental impressions. According to the story, eight members of a certain society were each requested to think intently of a cat, and then to gaze upon a sensitive plate in a dark-room. The plate was developed, and lo and behold! eight cats of various sizes and degrees of spectrality were distinguishable on the plate! A half-tone reproduction from this plate was printed in the *Popular Science Monthly*, together with a pedantic article on the subject of the photography of mental impressions.

It seems that one of the professors had taken eight exposures of the janitor's cat, and that the composite from these exposures formed the basis of the hoax.

A very little time and pains on their part to investigate some of this so-called science would

prevent them from being led into such errors. For instance, how much would it have cost to ask a *practical* bee-keeper whether Prof. Tyndall's statement was founded on fact or not?

It is a wonder that they did not at a later time exploit on the advance of science when that other hoax came out that artificial eggs were made that would hatch chickens, but so far the chickens did not have feathers.

As to the cat hoax, these professors must have known that the *Popular Science Monthly* from its past reputation was more gullible than other journals of its class, and hence their joke. We should like to have seen the cat-aclysm that occurred in their office when the hoax, like the unfortunate cat, was "exposed."

#### SALOON-KEEPER HONEY-BUYERS.

SINCE writing the editorial in another column, cautioning bee-keepers against sending honey to commission houses that quote away above the market, I have received information to the effect that some of these honey-sharks are none other than saloon-keepers. They have the idea that there is big money in handling honey as well as in selling beer. Of course, they have no conscience, and quote the market away above what it actually is; and if they can make an actual purchase from the honey-producer, and are irresponsible, they will sell the honey *below the market*, and pocket the proceeds, without rendering any returns. Just this very thing was done last fall, and a prominent bee-keeper was the victim of the saloon-keeper. One of our bee-keeping friends sends us a sample of one of these circulars, which is of about the same stamp as the one I have described elsewhere. The commercial agencies give them no rating, and give their business as "saloon." That ought to be enough.

It seems like almost unnecessary repetition; but it is nevertheless necessary to say and keep on saying, Don't send honey to concerns who quote away above the market, and want to buy outright, unless you can get cash *before* turning the honey over. Either bee-keepers do not read the bee-journals they do take, or else they do not take bee-journals at all; for some one is continually being "taken in" by these sharks every year. The producer who has a few hundred pounds of honey to sell, and who can not afford to take a bee-journal, must not complain if he does get taken in pretty badly by saloon-keeping honey-men. We like to see the prices shoved up; but one thing is certain, new firms can not be expected to do as well as old ones.

#### MORE ABOUT THE HONEY-SHARKS OF CHICAGO; HOW TO SHIP HONEY BY FREIGHT.

JUST before the publication of our last issue, information came to us regarding the existence of a ring of honey-sharks in Chicago, and I see the *American Bee Journal* is already on track

of them. It seems as I stated, that there are some disreputable firms that talk big, generally without any commercial rating, who are banded together for the purpose of bleeding bee-keepers of their honest hard earnings. As I explained in our last issue, their scheme is to offer quotations on comb and extracted honey, considerably above the market, in order to get consignments. If they can get a producer to make an outright sale, that is just what they want; because *then* they do not have to pay for the honey, nor can they be forced to, because they are irresponsible and non-collectable. If sent on commission, then of course the honey is the property of the bee-keeper, and they have got to render some returns or take the consequences.

One firm quotes white-clover honey in one-pound sections, choice,  $15\frac{1}{2}$  to  $16\frac{1}{2}$ , when they know perfectly well that the market of Chicago is only 12 and 13 cts. Again, they quote bright pure beeswax at 32 to 35 cts., when they know perfectly well the right quotation is about 22 to 25.

Now, you may wonder why we do not give the name of this firm. We are at present making a very thorough investigation, and just as soon as we can make sure that they are an out-and-out fake we will give our readers their name. In the mean time we want to caution you in regard to a class of circulars from commission houses, printed on yellow paper on a sheet about 12x14, and making quotations above regular well-known houses.

Now, let me caution you again, as I did in last issue, don't, *don't* send your money to firms you don't know anything about, even though they talk glibly about bank references, their high standing, their long experience, and all that. Just send their names on to us, and we can tell you very quickly whether or not they are responsible.

#### SHIPPING HONEY BY FREIGHT C. O. D.

If you *must* ship your honey to some new firm, or to some firm concerning whom you do not feel exactly satisfied with, and yet who appear to have good bank references, proceed in this way: Consign your honey to your own name, in the city or town where the honey is to be sent. Go to your nearest bank, with the bill of lading, and request them to make out a sight draft for the amount of the bill, and forward it with the bill of lading to their corresponding bank in the town or city where the honey is consigned. The bank at that place will, on receipt of the money, turn over to the parties the bill of lading, which will entitle them to get the honey at the railway station, and you, in the mean time, will get the cash.

This is the ordinary way of sending honey or any other commodity by freight C. O. D.; but in this case the bank or banks take the place of the express company as custodians of your

property, and do not surrender it over until the same has been properly paid for. In many cases the banks, on presentation of the sight draft, make a liberal advance at once, providing the customer for your honey is known to them. Their rate of charge, usually, for such service, is a minimum of 25 cts.; on larger amounts, about one-fourth of one per cent.

If the party desiring your honey does not pay for the same, or refuses to take it, you can instruct the bank to turn it over to some other commission house; but it is never wise to ship honey in this way unless you are tolerably certain that the firm desiring to purchase it will take and pay for it. If it refuses, you must go to the expense and trouble of finding another house, carrying on the negotiations by telegraph, and perhaps of accepting terms which may be considerably less than what you would be willing to take, except for the fact that the honey is already shipped, and at its destination, in the hands of the railroad company, and *must* be disposed of at once.

#### CREATING YOUR OWN HOME MARKET.

I have nothing to say against reliable commission houses; but even with the most honorable of them, sometimes dissatisfaction arises. And then, too, you must understand, when you ship honey on commission, that you have to pay cartage, freight, and commission of generally 10 per cent. The result is, that you can not get more than 85 per cent of the market quotations, and more often not over 75 per cent.\* And then, too, when everybody consigns honey to the city it has a strong tendency to depress prices. Honey, like every thing else, is subject to the law of supply and demand. Reduce the supply in the cities, and the prices must necessarily go up.

A good deal has been said about selling honey around home; but it will do no harm to say more about it. F. A. Snell and others have been writing in our columns of late a series of articles on peddling honey, and creating a home market; and there are hundreds and hundreds of bee-keepers, thrifty ones, who every year sell their honey at a large advance over the regular market quotations in their cities. Our friend Dan White, of New London, O., a bright and progressive bee-keeper, sells his honey around home; and he told me, a few days ago, that he always expected to get several cents more per pound for his honey, even including cost of labor in disposing of it, than he could get by shipping it to the city. H. G. Acklin, of St. Paul, is another example; F. A. Snell another; Geo. D. Vinal another, and so I might give you quite a list.

\*At the Chicago State Convention it was figured by the members present that, when comb honey is quoted at 14 cts., the net amount received by the producer (after commission, cartage, freight, leakage, and shipping-cases have been deducted) is only 10 cts., or only 71 per cent of the market quotation.—Ed.





Lest Satan should get an advantage of us; for we are not ignorant of his devices.—II. COR. 2:11.

I have taken the above expression away from its connection, as you will notice, and for the present we will not stop to consider the time and circumstances. The writer seems to recognize that Satan is *likely* to get the advantage of us; and in the latter part he says, "We are not ignorant of his devices." As I see it, all mankind should be able to assent to the latter. Who is there who has not had experience sooner or later with Satan's devices—yes, of his devices without end and without number? The work of his devices is sprung on us when least expected. They get in and occur everywhere; and, saddest of all, Satan *does* get more or less the advantage of us almost before we know it. How shall we recognize him? Some years ago, I think it was, I mentioned in these very papers that some of the friends called me superstitious because I believe in Satan as well as in Christ Jesus; that is, I believe in the *existence* of Satan, the enemy and adversary of the human race. Since then I have grown some years older; but my belief has been strengthened right along year by year. Perhaps I have not had so many personal encounters of my own with the great adversary, but I come on to him more and more through others. I do not mean that others introduce him to me, for Satan never seeks an introduction; that is, he never introduces himself under *his own name*. As a matter of course, he always claims to be a very good and well-meaning person. The Scriptures tell us he sometimes appears as an angel of light. He always has a very ingenious rigmale, and he will make you believe white is black or that midnight darkness is daylight; and if you stop to listen and parley he will make his reasoning sound very plausible. How shall we know him? what are some of his "ear-marks"? Well, he is always stirring up strife. He will commence by getting in between husband and wife, as I told you in our last issue; and he will make strife between father and mother in order that he may be better able to get the rest of the family into strife and contention. He always undertakes to persuade a man that his very best friends are his *enemies*. He induces him to believe that his nearest and dearest friends are trying to undermine him; that they are greedy for his place, and would like to have him turned off or routed out, that they may get into his shoes. He does not *always* commence in this way, but that very soon follows. He will persuade a pupil that his teacher is his enemy; and the same with an employee. He will whisper that his employer is greedy and grasping; that he just makes a machine of all of his helpers in order that he may coin dollars and cents out of them. And then he tells the employer that his *helpers* are greedy and dishonest; that they need watching all around; that it is not safe for him to be out of sight. Oh dear me! what a sad state of affairs! The employer finally thinks he can not take time to eat and drink, to say nothing of cultivating social relations, having family prayers, and reading the Bible to his children. Satan tells him that these things are behind the age—they are old-fashioned. "Nobody nowadays," Satan says, "thinks of following up this nonsense." I wonder if *some* of you think my last words come pretty near expressing the truth in the matter.

Dear friends, some years ago Satan might have made some headway in suggesting that family worship is not as important as business obligations. I might have listened a little when he said it did not amount to any thing and did no good. Thank God, that time is past. Honest and consistent family worship lies not only at the foundation of a beautiful and happy home, but it is at the bottom of the best kind of success that a man can ever have in *any thing* in this world. I should be *afraid* to neglect daily Bible-reading and prayer. I should be afraid that Satan, with some of his "devices," would get the advantage, not only of myself, but of the dear wife and children. I recently listened to a sermon by the Rev. A. E. Thompson, an evangelist who, I believe, is now working in Dakota; and this sermon gave me some very valuable suggestions in this matter of keeping Satan out. He said it is a mistake to fight Satan face to face. As long as the old fellow can get you to look at him and strike at him he is pretty well satisfied, for he will always come out ahead in any such hand-to-hand conflict. The minister did not express it in just the language I have used, but that was his thought; and he said, furthermore, the way to resist the Devil is to show him your *back*. That may be a novel way of fighting; but, dear friend, you may have already discovered that it is the very best way in the world to fight some kinds of people and some kinds of enemies—turn your back resolutely. Do not answer them, do not notice them, do not have any thing more to do with them. I would be courteous and civil at first; but when you discover that your opponent does not intend to reason or be decent, do not waste words or attention on him. Turn away. Then what? or, in other words, to *whom* shall we turn after we have turned our backs on Satan? Why, I hardly need add that you are to turn to *Christ Jesus*. Turn to him with that little old prayer of mine—"Lord, help!" You need not be *ashamed* of asking his help, for no man or woman will *ever* find a place or *position* where they will no longer need to say, "Lord, help!" You can, with perfect safety, face the dear *Savior* always and at all times. In rescuing lost souls from the clutches of the evil one you can *even then* face the Savior and implore his help; and unless you do face him, and recognize the need of his help, you will never make any headway against Satan.

As I grow older it becomes impressed on me that the greatest trouble with poor frail mankind is, they will never acknowledge the mischief or the trouble that confronts them as of *Satan's making*. Even though they be professing Christians, they are very apt to laugh at the idea that it is the *Devil's* work instead of, as they would put it, a combination of circumstances. The Devil's work is *always* a combination of circumstances. Paul says in the text, "We are not ignorant of his devices;" but I am afraid the greater part of us during this nineteenth century are comparatively ignorant of his *wonderful resources* in the way of devices. From the position I hold here, cases are often brought up before me. There are sometimes misunderstandings, prejudice, and may be jealousy, among half a dozen. The difficulty is to look into the matter and see who is and who is not to blame. Where do right and justice lie? Well, I am often at fault in saying just who is right or nearest right; but I am sure I am not at fault when I say, "Look here, dear friends; this trouble is all of Satan's doing. You are all professing Christians. You should know from the evidences all along which I have just heard, that this is *Satan's* work and nothing else.



You are unfortunate because you are in his toils; but you may rejoice that you are each and all professing Christians, and can honestly kneel and join with me while I implore the dear Savior to come to our rescue and to help us each and all to recognize the cause of all the mischief, and to say, "Get thee behind me, Satan." There is not any trouble—at least not usually—in getting them all to kneel; and if I could as easily persuade them, each and all, that the whole trouble lies at Satan's door, then weshould have quick and complete deliverance.

There will usually be more or less who think it is only one of A. I. Root's notions that it is Satan's work; and these skeptical ones (in regard to this matter of Satan) will go on facing him, and the troubles will not be ended.

Satan sometimes gets in among a lot of friends in a way that would almost seem as if it were the smallpox.\* If a doctor should come into a home and announce that the whole family were afflicted more or less with the smallpox, with one accord and with perfect agreement they would *all* set to work to get it out. Now, when the pastor tells you that Satan has crept in among you, what a *glorious* thing it would be if you could be made to believe it in the same way that you would believe the doctor in the former case! Why, the most trivial things will sometimes give him an excuse for dividing friends. People who should be on the most friendly and pleasant terms, all at once, without sense or reason, begin quarreling with each other. Yes, he sometimes gets right in among *Christians* and into the *church*. I have heard of his getting into the pulpit; but, thank God, I have never seen him there in all my experience. Let me give you just one illustration: While a certain pastor was off on a vacation his people went to work and fitted up the interior of the church in the most beautiful shape; and then the question arose as to whether they should not invite another minister, and have services a Sunday or two before their own pastor returned. Somebody started the idea that the church should be kept vacant until the pastor's return, out of respect to him, that he might be the first to hold services amid the improved surroundings. One part of the people (and I am afraid it was a minority) thought the church should be opened and services held just as soon as the building was ready; and in discussing a simple matter like this, some of the people got terribly stirred up, and showed a most unchristianlike spirit. On general principles, it is certainly bad to have the doors of a church closed on Sunday; but I am afraid that on this occasion Satan fairly chuckled while he urged one party to declare that there should be and *must* be preaching, and at the same time exhorted the other side to the effect that it would be *disrespectful*, and not to be *thought* of, to let anybody else occupy the new pulpit and surroundings for even one Sunday.

I started out to give you a neighborly talk this time. Well, these skeptical ones, instead of accepting *my* version of the matter, will insist that it is his neighbor or his fellow-workman that causes the trouble. He says to himself, if he does not say it out loud, "This man is all very good and fair to my face; but just as soon as my back is turned he is doing every

thing he can to trouble me and injure me in the sight of my employers. He purposely hinders my business; he looks over my work, and makes fun of it, and points it out to others. He is a regular 'snake in the grass.'" And when Satan gets him well under his thumb he goes so far as to say, "Either he or I will have to work somewhere else." I have seen this thing enacted for years. When it goes on a little further, the victim of Satan will declare these things he imagines are *true*. I remember one person, years ago, who had been a dear friend of mine. He became jealous of me, and imagined that I was acting dishonestly and unneighborly. I remonstrated with him, and told him his statements were preposterous; but he finally wound up by saying, "It is true, for I saw you do it with my own eyes." Now, the man did not see me do it, because he was not there at the time and place, and he was obliged to admit that much. He finally got out of it by saying something like this: "Well, I can not understand just how it happened; but I saw you do it, even if I was *not* there." There was no other thing for me to do but to think that the man had, for the time, taken leave of his senses; but he had not: he was simply under the power of Satan; and Satan had got such a hold on him that he lost sight of reason and common sense at just that particular point. He was sound enough and sane enough on every thing else.

Now, neighbors, when they get into a quarrel—when they become suspicious of each other—when they get into this awfully uncharitable spirit—*do* lose sight of sense and reason. They are like the man who declared *he* was not drunk at all; but that the truth was, all the rest of the world was drunk and he alone was sober. The remedy for all these ills and troubles is Christ Jesus, and he only: "for there is no other name given under heaven among men, whereby we must be saved." And this is true. There is no other real remedy. I am convinced that the only deliverance from the prince of darkness is through Christ Jesus, the Lord and Savior of mankind.

Perhaps I should suggest that the first step toward getting into Satan's toils is some wrong act. The one who begins to be suspicious has usually opened the way by taking advantage of somebody else. If I knew all of you, dear readers, you might think me personal, and feel hurt about it. Perhaps it is well that I do not know you—at least, that I do not know of the quarrels you are entangled in; therefore I can say with the greater prospect of doing you good, that, when you find yourself beginning to be suspicious of your friends and neighbors, it is because you have been in some way violating your own conscience. You have wronged some one of them. You have done something that you know very well is not exactly fair and honest and neighborly. Whether you are a professing Christian or not, if you wish to enjoy this life God has given us all to live, you must not only be *fair*, but you must be *liberal*. The man who gives good measure—perhaps a little more than exactly full—is the one who enjoys life, and who succeeds.

Just now a good many people find it *difficult* to hold their places or positions of employment. There are ever so many struggling to get the work that is to be done. There are unusual temptations to be greedy and to crowd on your neighbors. You may reason that *your* circumstances are more critical than those of the others—you *must* have something to do. Now, it is perfectly right for you to strive by every honorable means to hold your position. Nobody has talked this more strongly than myself; but when you go beyond right and justice

\* If your neighbor is cranky, disobliging, and hard to get along with, please remember he is to be pitied somewhat as well as blamed. Try to feel toward him as if he had the smallpox, as I have put it elsewhere. Banish the bad spirit by doing him a friendly turn whenever an opportunity offers. Now, don't say this is one of A. I. Root's notions, for you know full well it was the Master who said, "Love ye your enemies; do good to those who hate you."



you are hurting yourself. If you are not honest toward your neighbor, you can not honestly ask God to bless and help you. You have by your own act cut yourself off from God, and you can not consistently breathe the little prayer, "Lord, help!" Furthermore, you have opened the way to Satan, and he will not be slow, I assure you, in improving his opportunities. Discord, dissension, strife, suspicions of other people's motives, of their honesty, integrity, virtue, and every thing else, will follow in. At the same time Satan will say to you, "Oh, you are all right; do not worry or trouble yourself about it. Nobody knows what you are doing or what you have done. They do not think or see any thing about it; it is a small thing, anyhow. What is the use of being so overparticular and puritanical? At this present age and time every one has to make his own living—others must take care of themselves. If they are unfortunately situated, that is not your affair. They will have to manage it themselves as best they can." Such is the style of the Devil's reasoning. Have you ever heard any of it? Has he whispered to you? Is this quarrel you are in just now a part of Satan's work?

Dear friend, let me ask of you, when this meets your eye, are you at peace with God and all mankind? If you are not, is it not possible that what I have been telling you will lead you to discover the cause of your unhappiness? If so, you *can* get back to the Savior's feet if you are willing to bear the cross that you may have to bear to reach it. But let me beg of you, do not delay another day or another hour. Give up every thing—let every thing else go. Remember that heaven and earth shall pass away (these friends with whom you are having trouble will, like yourself, be soon dead and gone); but the record will be left; and these immortal souls will live on and for ever. Heaven and earth shall *indeed* pass away; but God's holy word and its teachings shall *not* pass away.



#### GROWING ONIONS TO BUNCH UP FOR MARKET.

As there seems to be more inquiry in regard to this branch of gardening than almost any thing else, I have thought best to consider the matter. We commence selling bunch onions here about Christmas; but we sell more of them along in January. In February there is a steady demand, and from that time till strawberry time. There are quite a few people who will buy onions to slice up like cucumbers, every day in the year. In some markets enormous quantities of them are sold, especially late in the spring, when the onions are about half grown. I remember last summer, at a time when we had concluded the bunch-onion business was over, a huckster came along with a load of stuff. It was raining, so he was anxious to sell out and go home. He had bunches of onions hung up around his wagon, and these bunches were enormous, not only in the size of the onion, but the number he gave for a nickel. I bought him out, and found that some of his bunches weighed about 3 lbs. I told him I thought he was furnishing a good deal for a nickel; but he thought he could do tiptop, even at that price. A pound of green onions, top and all, would perhaps be equivalent to about half a pound after the top is removed and

the onion properly cured; so that the onions he pulled up and sold, top and all, for a nickel, would have been equivalent to \$1.00 a bushel for dry onions. We rarely give over 2 lbs. to a bunch. In January and February we get a nickel for  $\frac{1}{4}$  lb. grown in the greenhouse.

The prettiest onions for bunching are, without question, the American Pearl, White Victoria, or some other pearly-white onion. To grow these under glass, the seed should be put out now (Oct. 1st)—that is, if you have not done it already. A great many of the onions grown under glass are produced by putting any sort of onions that you have no other use for under the beds in the greenhouse. Put them about as close together as they can stand. Give them rich ground and moderate heat, and they will soon commence to grow. Bank up when they are well started; sift on peat or other rich soil until the tops are just covered. When they come through, put on a little more. In this way you will have long tender white stalks. These are frequently put on the table in glasses, like celery. You can grow these all winter long in the greenhouse. But a better-looking onion, with something of a bulb, is produced by growing Egyptian or winter onions, in the greenhouse. This is usually done by planting the sets outdoors some time in the fall. These are taken up just before the ground freezes, and planted under glass. Very little heat is required. In fact, very nice onions are often produced in a cold-frame, without any heat. The quality of this winter onion, as I have many times explained, is not equal to the American Pearl and other less hardy varieties; but they are so easily grown you can give a very good-sized bunch of them, even in winter. Where great quantities of bunch onions are wanted, this is perhaps best for the purpose. By mulching around the stems as I have described, these may be made to grow very long. Sometimes we see them in the market with stems white and tender, nearly a foot in length. The bottoms of these onions, or the old plants that have raised seed, are sometimes used for forcing under glass, and some gardeners prefer them to the sets. A good many, however, object to the winter onion because it is strong, and becomes tough; and almost anybody will take a bunch of American Pearl onions, even if it is only half the usual size of the winter onion when they can get it.

This brings us to the matter of growing American Pearl onions for bunching, in cold-frames, without the use of any heat except that of the sun. This is done by sowing the seed in beds (in August or September) so the onions will stand about the right distance apart, and having them about the size of onion-sets when cold freezing weather comes on. This onion is so hardy that it can stand quite a good deal of frost. Before the ground freezes up hard and solid, however, the sashes should be put over them. They seem to stand about as much frost as cold-frame cabbage-plants. In very severe localities, in cold weather it may be best to cover the sashes with shutters or straw mats; but we have never done it, and we have never had our onions much injured while they were covered with glass. It should be remembered, however, that onions are a very hardy plant, and are impatient of confinement, if we may so express it. They do much better if the sashes are off entirely whenever it is not freezing, or whenever there happens to be rain in the winter time. They seem to delight in wetness, providing they can have plenty of air. I do not mean by this that they can endure standing water. The plant beds should be well drained, so the water can get away. Along



in February, if the weather is warm and the sun shines very clear, you will have to give them plenty of ventilation. If managed rightly they will just grow beautifully all the spring months. In March the sashes can be left off almost entirely; and by the first of April in our locality we can take the glass away and use it for something else. Once or twice I have known a very heavy frost in April to do them some harm. The cloth sheets, however, would be all the protection needed at such a time. We generally commence by giving  $\frac{1}{4}$  lb. of American Pearl onions for a nickel; a little later we make it  $\frac{1}{2}$  of a pound; then  $\frac{3}{4}$  lb.; then a whole pound; and when they get to be nearly the size of hens' eggs, customers seem to be so well satisfied with a bunch weighing a pound, tops and all, that we do not often give them more than that amount of this variety for a nickel. If you are going to give two or three pounds for a bunch you must grow them by field culture; and almost any variety will answer for this purpose. Where the onions stand too thick in the field, the thinnings are often used to bunch up. Very much depends on the looks of bunch onions. The bottoms must be peeled so as to make them look fresh and clean, and the tops must be of a bright thrifty green. I know it is customary in the cities to offer them at wholesale as low as 20 cts. for a dozen bunches, and sometimes they are down to 15 or even 12 cts. But, of course, these bunches are small, and generally inferior in looks. Bunch onions should be put on the market, and placed before the consumer, the very day they are taken from the ground, if possible. The labor of putting them up is considerable; but one who is an expert at the business, and furnished with rubber bands for slipping over the bunches, instead of tying, will put them up very quickly. We have grown them for years, both in the greenhouse and in open beds covered with glass, with artificial heat and without. I believe I should prefer the open beds to the greenhouse, because of the facility with which the glass can be taken off so as to give them the sun and rain. A little heat seems to be an advantage; but if you are careless, and let them get a little too much heat, you will wish, as I often do, that they were in a bed where there is no heat at all except what comes through the glass. If a greenhouse is used it should be some cheap affair that will bring the glass very near to the plants. For growing onions from the seed or sets, you want the full benefit of the sun. If, however, you want to utilize onions that have begun to sprout, and won't sell easily, they will do very well under the beds, or in a cellar where it is pretty dark. To get this rank tender growth that is wanted in the winter months, the ground should be made exceedingly rich with old fine manure. We have not received much benefit from any of the chemical fertilizers, but guano seems to answer admirably.

#### GROWING ONIONS FOR BUNCHING, ENTIRELY IN THE OPEN AIR.

The best onion for this purpose—that is, the best in quality—is the American Pearl; and where the sets are planted any time in September in good rich ground, so as to get well rooted before freezing weather, we have never had any trouble in wintering them nicely. We have tried them both with and without mulching. If a mulching is used it must not be laid over them so as to cover and bend down the tops. If it does, it will pretty surely cause them to rot. Short manure, so it can be sifted between the rows without covering the tops, I believe, is a benefit. Besides the American Pearl we have the new white multiplier. These may be planted

very early in the spring or in September, at the same time that you plant the American Pearls. They are fully as hardy as the American Pearls—perhaps more so. They never bother us by sending up a seed-stalk, which the American Pearl does. These seed-stalks must be pinched off just as soon as you get a glimpse of them, or it will make your onion tough, and unfit for use.

And then there is one other new onion that promises great things, or, rather, bigger onions very early in the spring, than any thing else. This is what we described under the name of the Whittaker onion. It is no doubt a variety of the potato onion. It winters perfectly, and produces great solid beautiful onions, even ahead of the American Pearl; but it is a yellow onion instead of a white one. It will need more peeling to fit it for the market; but it is so hardy, and such an enormous grower, I think it is going to be a great favorite. This onion, like the multiplier, never sends up a seed-stalk. Both kinds mature, and the tops dry down some time in July. By this time they should be gathered and sorted—the small ones, medium size, and the large ones put by themselves. The three sizes had better be planted, each kind by itself. The planting should be done in August or September. No matter when you plant them, they will not grow much until we have cool weather and fall rains. The smaller ones will simply grow larger, but the larger and medium-sized ones will split up into small ones. The Whittaker onion has the rather peculiar property of making little onions which grow little suckers from the parent plant. These will mature, and be found lying loose on top of the ground all through June and July. They may be picked up and stored away for sets.

There, friends, I think I have told you briefly pretty much all I know about bunch onions for market, and the different kinds we use for the purpose.

#### THE BUNCH YAM AND THE VINELESS SWEET POTATO.

On page 275 of our issue for April 1 I spoke of the bunch yam. I am happy to tell you that we have succeeded in getting a very good yield of the bunch yam, and they are growing every day, too, quite satisfactorily. The best part of it is, the quality of the potatoes is most excellent. They are, perhaps, not as dry and mealy as the Jersey sweet potato; but they are very much sweeter, and as delicious as any thing I have ever tasted in the line of sweet potatoes. One of our circulars from the South states there are 14 lbs. of sugar in every 100 lbs. of potatoes, and I do not know but this may be true. This year we planted them on the poorest, hardest, dryest, gravelly ground we could find on the premises—some that had not had manure for years. In fact, the piece belongs to the railroad company, and that is the reason why I did not want to waste manure on it; and perhaps this accounts not only for my excellent yield, but for the superb quality. And this reminds me, when I was enthusiastic over raising sorghum here in the North, some thirty or forty years ago, one of the government bulletins said if you wanted a fine quality of syrup, almost equal to honey itself, you would have to raise your crop on poor, hard, dry ground; but, of course, we get a comparatively small yield of cane; but the quality is ever so much better than where you plant on the rich creek bottoms and have a tremendous growth of stalks and leaves. I wonder if this can be true with sweet potatoes. Last year, on my heavily manured deep rich ground I had a great growth of tops,